DOCTORAL THESIS

The inclusion of pupils on the autism spectrum through music and dance

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The inclusion of pupils on the autism spectrum through music and dance

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Abstract

Over the last 20 years there has been a hotly argued debate about the potentially positive and negative outcomes of including children with special educational needs, particularly those on the autism spectrum, in mainstream schools. The present study explores whether, and in what ways, pupils with autism can benefit from a music and dance intervention in terms of their participation and interaction with their peers, and how it can enhance their inclusion.

This study involves an intervention that was designed and carried out in primary mainstream settings in London with forty two children in total; among which seven were on the autism spectrum, aged 5-8 years. The intervention consists of a story, accompanied by music and dance activities, presented over six sessions. The six sessions were recorded on video. The results were analysed using a mixed-method design to allow comparison of the different variables through quantitative and qualitative analyses. The research used spatial proximity and task participation as proxy measures of inclusion. The main findings show that the pupils with autism and their peers were more engaged during music and that the children on the autism spectrum were more included during music and dance tasks, and less engaged or included during other activities unrelated to music or dance. Music and dance are effective tools for relaxation, helping children to self-regulate and organise their responses to sensory stimuli. The activities also offered opportunities for interaction, enhancing co-operation and inclusion. Music was found to be a positive cue for pupils to remember and perform tasks. The structure of the sessions and the repetition of tasks was also found to have a positive impact.

Building on the findings, the study discusses how the inclusion of pupils on the autism spectrum can be successful and suggests introducing music and movement in other curricular areas, including literacy.

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Prologue

> Exclusion is an unwanted blue colour.
>
> It can make you feel sorrow and anger at the same time.
>
> Some people can even be excluded for being a different colour or looking differently and even speaking differently from you.
>
> But inclusion makes you feel loved and cared for. Like the colours of orange and yellow as if the golden sun is shining down on you. You can feel happiness flowing through you
>
> Other people see it in your expression or how you sound to them.
>
> *Hope, Everyone Included*, An Inspirational Anthology of Poetry Written by Children (Nasen, 2011)

Personal background

The main focus of my research is on the inclusion in education of students with autism spectrum condition (ASC) through music and dance. In particular, the study explores the potential capacity of music and dance to promote social inclusion among primary-aged children on the autism spectrum placed in mainstream primary schools. In my experience as a dance teacher and special needs teacher, I found that music and dance was a highly motivating, social activity for young children. I became interested into how the participation of children in the arts can positively improve their physical, emotional and social skills and significantly enhance their overall development through an enjoyable and non-stressful activity. My study towards Masters of Arts in Special and Inclusive Education at Roehampton University gave me the opportunity to gain knowledge of autism and inclusion; the topic of my dissertation was the benefits of dance therapy accompanied by music for children with autism, and the comparison of approaches between the UK and Greece. I read an article by Wetz (2004) exploring how the arts can enhance inclusion in schools. This inspired me to start a research

programme and further research the potential benefits of dance and music, for autistic pupils, this time within the framework of inclusion and dance, music education. [1]

[1] The terms to describe the autism spectrum and autistic individuals will be used interchangeably in this thesis as there is no agreement on a single term adopted by professionals, families and autistic people (Kenny et al, 2015). Further discussed in section 1.5.

Chapter 1 Introduction

1.1 Setting the Scene

There is a growing number of pupils diagnosed on the autism spectrum, stated in their Education, Health and Care (EHC) plan. A recent report suggests that there are 76,015 autistic pupils in England, with the majority, 70%, attending mainstream educational settings (DfE, 2014). The inclusion of pupils with special needs and disabilities, including those with autism, in education has been an issue that has elicited debate for many years. There seems to be no agreement on what constitutes the most appropriate setting for children and young people with autism, but, for some children, at least, it is believed that attending a mainstream school can be beneficial in terms of social inclusion (Bond and Hebron, 2016). On the other hand, including pupils with autism can be challenging for teachers and pupils in terms of accessing the curriculum and developing positive relationships with peers (Campbell and Barger, 2014), which are fundamental aspects of inclusive education. Consequently, there is a need to identify effective strategies for the inclusion of pupils with autism in mainstream education.

A number of educational approaches has been designed for pupils with autism, ranging from holistic ones providing whole school/home/community framework (e.g. SCERTS Social Communication, Emotional Regulation, Transactional Support, TEACCH Treatment and Education of Autistic and Communication Handicapped Children) to more specific interventions targeting particular areas of challenge (e.g. PECS Picture Exchange Communication System, Intensive Interaction, Circle of Friends, Social Stories, the Five Point Scale approach to raise social and emotional awareness, and sensory integration therapies) which will be

explored later in the thesis. Music and dance, the foci of the current study, have also been used for pupils with autism, mainly in the form of therapy. Similar to the comprehensive methods mentioned above, music and dance therapy sessions have been mainly implemented in specialised settings in the form of one-to-one or small group therapy sessions. This work has been documented in the literature, but there is an apparent dearth in evidence-based studies. Most existing research on music and dance has also been based on relatively small samples with a large number being single case studies (Simpson and Keen, 2011; Martin, 2014).

The current study focuses on how music and dance can enhance the inclusion of autistic pupils attending mainstream settings in terms of their participation and socialisation. Being engaged in purposeful activities and developing friendships with peers have been defined as educational priorities when designing approaches for autistic people (Lord and McGee, 2001). This study adopts a qualitative and quantitative research design in the collection and analysis of the data, to provide an insight into how music and dance can enhance inclusion. An intervention based on an original story with specially chosen music and dance tasks was designed and video recorded to allow comparison of the different variables through statistical analyses. The present research also offers two case studies with detailed analyses that complements the statistical findings by exploring how music and dance proved to be beneficial for all pupils and especially those on the autism spectrum. Additional data collection tools such as an observation checklist, repetition of task and the 'monkey task' were used to provide further insights.

The present research explores, for the first time, the effects of music and dance combined for pupils with autism, attending mainstream settings and focusing on two aspects of inclusion. The study is original in terms of content and the

instruments used, and can be replicated with different groups in the future. Despite being small-scale research, the project offers a rigorous research design whose findings should make an important contribution to the field of music and dance for individuals with autism in inclusive education.

1.2 Rationale for the study

Although there is consensus that inclusion embodies the right of all children to education and learning, policies and practices differ and are continually evolving. It was vital for my research to develop an operational definition of inclusion and set a framework regarding which features constitute the social dimension of inclusion. Particularly, this study takes into account the roles of belonging and friendship. It is essential to promote a sense of belonging and encourage positive peer relationships if inclusion is to be achieved (Cigman 2008, Jones, 2004; Warnock, 2005).

The two initial questions, which emerged from the literature research, were: 'What constitutes effective inclusion?' and 'How can music and dance enhance the inclusion of autistic students in the mainstream setting?' This led to the formation of the main research question of the project, of how music and dance can promote the inclusion of pupils with autism in relation to their engagement on task and their proximity with a group of peers.

1.3 Design of the study

In order to explore how music and dance can promote the socialisation of students with autism, an intervention was designed and carried out in primary education mainstream settings. During the six-week intervention programme, four different variables were incorporated, namely: i) music, ii) dance, iii) music and dance, and

iv) neither music or dance (story by itself). The main body of the intervention programme consisted of a story (see Appendix 1) enhanced by dance and music activities in relation to the content. A mixed methods approach was used for the collection and analysis of the data with video being the main data collection tool. Observation of the sessions produced statistical findings with regard to the engagement on task and inclusion of pupils in the group. The two detailed case studies were also facilitated by observation of the videoed sessions.

1.4 Overview of thesis

Chapter one: Introduction

The current chapter introduces the reader to the thesis and presents a summary of the study objectives and design.

Chapter two: Literature review

The first section of the chapter sets the context of inclusive education. It presents the different definitions and understandings attributed to the term, and unfolds the debates around special and inclusive education. The scene is set around inclusion and children with autism, which is the main focus of the study, and particularly contested issue as ASC has been described as both a challenge and a model for inclusion in education (Jordan, 2008). In the present study, inclusion is defined as peer acceptance, sense of belonging and contribution to the group through engagement in group activities and cooperation between peers. The inclusion of autistic pupils can often be challenging due to their differences and difficulties in social communication, interaction and flexibility of thought of behaviour. Autism is then described in the chapter with special reference to the different theories to explain the condition, the main characteristics of individuals with autism and how

these can impact everyday school life. The chapter concludes with the main therapies and approaches used for pupils with autism, especially involving music and dance. Distinctions are made between therapy and education and the philosophical underpinning of the study is explained by locating the study into a framework of inclusive education.

Chapter three: Methodology

The third chapter describes the analytical framework of the research study. It explores the epistemology and methodological stances, the reasons for using a mixed methods approach and the specific data collection tools. It discusses the unique research design with an emphasis on the different stages of this process. The chapter briefly presents the participants of the study, and describes the processes of data collection and analysis. Reliability and validity issues are discussed as well as limitations of the research design. The chapter concludes by addressing the ethical considerations arising from the research, which mainly include questions about the methodology, selected and consent to participate, issues that need further consideration when the study involves children and especially when they may have language and communication difficulties.

Chapter four: Quantitative study results

Chapter four presents the statistical findings from the quantitative analysis stage with regard to the engagement on task and inclusion to the group of pupils with autism and their neurotypical peers according to the task in which they were involved (music, dance, music and dance, other). These show that children with autism are more engaged during music and more included in the group during music and dance. All participants in the study are less involved and included

during other, language based tasks. These findings from the structured observations will be further illustrated and explained by the mixed data results and qualitative analyses of the case studies presented in the following chapters.

Chapter five: Mixed data results

This chapter discusses the findings from the observation checklist completed by the teachers as well as the main results from qualitative data analyses: monkey task and repetition of task. The findings from the analyses of the checklists suggest that pupils with autism score higher in all areas of social functioning and play after their participation to the music and dance intervention. The repetition of task analysis shows that pupils with autism and their peers successfully repeat the task they learnt the week before with little adult prompting. Music was the predominant prompt that helped them remember the task. Finally, the monkey task explores how the peers view the children with autism and it is evident from the analysis of the data that after the intervention, peers accept and include the autistic pupils and recognise their contribution to the programme.

Chapter six: Case study I

This chapter presents the detailed analysis of the first case study by presenting the background of school and group, the checklist and feedback completed by teachers. Most importantly, it looks at each session in detail by analysing the factors that impact on engagement on task and inclusion with regard to the task in which the pupils were involved. This group consists of 5-6 year-old pupils among which there is a high functioning boy with autism. The findings help explain how music and dance were specifically beneficial for the autistic child and why he was less engaged and included during other tasks.

Chapter seven: Case study II

Chapter seven consists of the second case study analysis, following the same structure as the first case study. The participants of the group in this chapter are the oldest among all groups, i.e. 7–8 years old, and the pupil with autism is a girl, on the 'lower end' of the spectrum. Both case studies complement and reiterate the findings from the quantitative analysis and other measures. They also represent a varied sample of participants by analysing in detail the sessions with one group consisting of the youngest pupils and one group of the oldest participants in the programme. With regard to the autistic individual, the two selected case studies focus on one autistic boy who uses verbal language confidently and a pre-verbal autistic girl.

Chapter eight: Discussion

Chapter eight discusses the research questions in relation to the literature review and the theoretical framework around inclusive education. It presents the findings from the quantitative and qualitative analyses and compares them with previous relevant studies. The present study complements the current literature on the effectiveness of music for children with autism and adds to the existing knowledge by showing the benefits of music and dance combined for groups of autistic pupils and their neurotypical peers.

Chapter nine: Conclusion

The last chapter of the thesis discusses the implications of the findings from this study in relation to theory, educational policy, and practice of the inclusion of pupils with autism. It suggests ways of enhancing inclusion in relation to the different contested dimensions of inclusive education and stresses how music and

dance can have an impact in this respect. It then highlights the significance and originality of the study and its contribution to knowledge. The chapter concludes by acknowledging the limitations of the study, such as the small sample and by making suggestions for further research.

1.5 Notes on the terminology used

The use of terms in order to identify autism and people with autism has long been a matter of contention (Kenny et al., 2015), parallel to the discussions about the vocabulary used to identify people with disabilities and difficulties in learning, which will be further analysed in later chapters. A great deal of the discussion has involved the increased contribution of disabled people and related associations, disability movement and activism (Harpur, 2012). Currently a range of terms is used to describe autism such as: 'autism', 'autism spectrum' (AS), 'autism spectrum disorder' (ASD), autism spectrum condition (ASC), suggested by Baron-Cohen, 'Asperger's', being among the most widely used. A distinction on the order of words, person-first (person with…) or disability-first (autistic person) is also evident. A recent study by Kenny et al. (2015) revealed that there is no consensus on one single term to describe autism by autistic people, family members and professionals. However, 'the most highly endorsed terms were 'autism' and 'on the autism spectrum', and to a lesser extent, 'autism spectrum disorder', for which there was consensus across community groups' (Kenny et al, 2015: 1). Therefore, the above terms will be used interchangeably in this thesis when referring to autism.

Chapter 2 Literature Review

The purpose of the study is to explore the potential capacity of music and dance to enhance the inclusion of pupils with autism attending mainstream primary schools, with regard to their participation on task and in their group of peers. The aim of this chapter is to draw on the different literature relevant to this study. It is structured around the following three main sections:

- Inclusion
- Autism
- Music and dance

It starts by providing an overview of inclusive education through a historical background and unveils the different debates and barriers to inclusion. It then refers specifically to the inclusion of children with autism and leads to the following section, which aims to describe autism, explain the different theories and impact on school life. It analyses specifically at the social aspect of inclusion, which also poses an area of difficulty for individuals with autism. Then, it looks broadly at the main therapies and approaches used currently for children with autism spectrum. Finally, it explores music and dance and looks at research specifically relating on the use of music and dance for children with autism. The literature review closes with explaining the particular perspective and background underpinning the study.

2.1 Inclusion

2.1.1 Social Inclusion and Inclusive education

The concept of inclusive education, the main area of focus in the present study, relates to the broader notion of an inclusive society. It emerged in relation to that of inclusion in society with the aim to address issues of social exclusion, disadvantage and poverty (Terzi, 2014). There are different and often contrasting definitions of inclusive education and the meaning attributed to the term can vary from the specific one of educational placement, the inclusion of students with disabilities in mainstream settings, to the broad sense of social inclusion which invites governments and societies internationally to respect and respond to the diversity of learners and individuals (Florian, 2008).

The term 'social inclusion' emerged from the political struggles aimed at the realisation of the values of solidarity, opportunity and active participation of all in every aspect of social life (Norwich, 2010). Going beyond education, the terms 'inclusive society' and 'social inclusion' refer to being welcomed and having a sense of belonging and acceptance in groups and community through a range of social activities (Wrigley, 2003). The concept of social inclusion emerged as an antidote to social exclusion of groups of individuals or communities being deprived of their participation, rights and resources. Power and Wilson (2000) refer specifically to the housing, healthcare, employment and civic participation as the main areas of social exclusion. The move towards social inclusion involved individuals who had previously been excluded, due to race, ethnicity, religion, gender or disability. Social inclusion was underpinned by the concepts of solidarity and equity and aimed at enacting them in policy.

Inclusive society and education are strongly related and interdependent since schooling is the ground where an inclusive ethos, prerequisite for inclusive education, will prosper. Similarly, according to some scholars, 'inclusive education is directly linked to the idea of an inclusive society and the role of education is seen as fundamental to that achievement' (Terzi, 2008: 65). Its advocates view inclusive education as the foundation for an inclusive society and maintain that mainstream schools should meet the diverse needs of all students. According to this perspective, education is the 'gateway to full social inclusion' (Jordan, 2008: 11).

On the other hand, among others, Warnock argues that schools should not be seen as 'microcosms of the society' and that students should be included in a 'common enterprise of learning' and not necessarily under a common roof (Warnock, 2010: 32). Warnock distinguishes education and schooling from life-long learning and perceives the 'enterprise of learning' more in academic than social outcomes, perhaps without taking into consideration the importance of social learning taking place in schools (Norwich, 2010). Reindal (2010) stresses that the main aim of education is to teach fundamental skills, and makes a distinction between inclusive education and inclusion in society. She states that 'parents send their children to school to be educated, not to be included' (op. cit.: 10).

Inclusion, either seen as a social or educational value, raises fundamental questions and dilemmas at a philosophical level relating directly to policy and practice. Inclusion relates to all pupils, but specifically to those with special educational needs and disabilities, including those with autism, who are the focus of the current study. There are various and often contrasting definitions of inclusive education and of the terms of 'disability' and 'special educational needs' (see section

2.1.3.1). Exploring the contentious nature of the field of inclusion in education necessitates a brief historical overview of special and inclusive education.

2.1.2 Historical context

The history of inclusion is closely connected to the history of special education and that of educational provision for pupils with special educational needs. In the mid-twentieth century, the 1944 Education Act (UK) introduced eleven 'categories of handicap' and offered educational provision to disabled children for the first time.

However, 'it was not until the implementation of the Education (Handicapped Children) Act 1970 that responsibility for provision for children categorised as "mentally handicapped" was passed from the health authorities to local education authorities' (Barton and Armstrong, 2008: 9). According to Lloyd (2002), the most important change in Europe in special education in terms of policy and practice has been the move from segregated settings towards the integration of pupils with SEN into mainstream schools. Importantly, in the UK before the Handicapped Children's Act in 1970, children with SEN were considered "ineducable" and not entitled to education. This Act was followed by the attempt to offer equal chances to all children by integrating them not only into the educational system but into mainstream settings. The term 'integration' can be defined as the "physical placement" of students with special educational needs (SEN) into a regular school. The term implies that the student should "adapt to the school" and not the school to pupils' needs, which is in contrast to the notion of inclusion (Campbell, 2002: 12). In other words, looking at integration in retrospect, it seems that children with special educational needs (SEN) were not fully accepted or included in school life since the intention was to "normalise" them in order to render them active

participants in the learning process. On the other hand, inclusion supports the idea that individual differences and diversities should be regarded as a valuable feature that will benefit the school life and that the schooling system should provide ways in order to adapt to the individual needs of every student.

These concepts and values were encompassed in the Warnock Report (1978), which can be regarded as a milestone in special educational policy. It introduced officially for the first time the notion of "special educational needs" (SEN), replacing the eleven categories of impairment introduced by the 1944 Education Act, and placed emphasis on the effective assessment of the different needs of all children. As Lindsay (2003) underlines, the Warnock Report "argued for integration" of children with SEN (Lindsay, 2003: 4), rather than their inclusion. The Warnock Report was followed by the 1981 Education Act, which provided a legislative framework for the enactment of the recommendations of the report.

The term 'inclusion' was officially introduced internationally by the Salamanca Statement and Framework for Action on Special Needs Education which was adopted by the 1994 World Conference on Special Needs Education: Access and Quality (UNESCO, 1994). It placed emphasis on the quality of education provided and to the 'extent to which a pupil with SEN is truly integrated' (Farrell, 2001). Lindsay (2003) states that the process of educational inclusion in the UK has been accelerated with the aid of the *Green Paper* (1997), the *Special Needs Action Programme* (1998) and the *Code of Practice* (2001). He explains that the *Special Educational Needs and Disability Act 2001* recognised that a child with SEN must be educated in a mainstream school "unless this would be incompatible with the wishes of the parents or the provision of efficient education of other children" (p. 5). Similarly, the government's strategy *Removing Barriers to Achievement* (DfES,

2004) placed emphasis on the need for collaboration between schools and staff in order to improve whole organisation and promote inclusive practices (Lloyd, 2008). In addition, the guidance document *Quality Standards for Special Educational Needs (SEN) Support and Outreach Services* (DfES, 2008) was designed to suggest the standards for improved outcomes for children and young people with SEN. The guidelines are based on the premise that individuals with SEN and disabilities have 'the same entitlement as all individuals to participate equitably in education, to be included alongside their peers, and to achieve their full potential across the full range of the *Every Child Matters* (DfES, 2004) outcomes: being healthy, staying safe, enjoying and achieving, making a positive contribution, economic well-being (DfES, 2008: 4).

More recently, the policy document *Breaking the link between special educational needs and low attainment – Everyone's business* (DfES, 2010) aims at influencing attitudes of all school professionals towards improving outcomes for students with SEN by providing guidance in areas of collaboration, leadership and teaching strategies. In addition, the Green Paper *Support and aspiration: A new approach to special educational needs and disability - A consultation* (2011) promises to 'remove the bias towards inclusive education' and focuses greatly on the terminology and concepts of special education (DfE, 2011). The Green Paper aims at increasing parental choice by offering more places in specialist settings and goes against the closure of special schools. The new *SEND Code of Practice 0-25 years* (DfE, 2015) is the most recent statutory guidance for individuals with special educational needs and disabilities from birth up to adulthood. The Code prioritises the collaboration between education, social care and health services, and argues for a stronger participation of children, young people and their families in the process

of decision making. Education Health and Care (EHC) plans, replacing the old system of Statements of SEN are introduced with the aim to provide more joined up support. Parallel to the policy developments described above, Academies were introduced as part of the New Labour Government Programme (1997-2010) and operate as independent, non-maintained schools. With regard to pupils with special educational needs and disabilities, although academies are required to abide to the SEN Code of Practice, there are concerns that academies have a greater autonomy than maintained schools, enabling them to make changes to their admission criteria of pupils with SEND or to the provision and supports offered (Wolfe, 2011). Research in these aspects is however still at an initial stage.

Despite the various guidance documents and important changes in the policy arena throughout the last decades concerned with providing equality of opportunity in education for all children, inclusion is still a contentious issue both in theory and practice. Hodkinson (2010) argues that the present urge for the application of inclusive policies in education shows how these rapid philosophical and political developments outpace practice. As a result, a number of tensions may arise such as questions about the location of schooling and the effectiveness of the concept of special education needs (SEN), as well as the usefulness of categories in determining provision and support, which will be further discussed later in this section.

2.1.3 Inclusion – the different concepts, tensions and debates

2.1.3.1 Special educational needs and disabilities

Underpinning the concepts of social inclusion and inclusive education for children with special educational needs and disabilities lie often contrasting conceptions of what is a disability and what a special educational need. Keil et. al (2006) reviewed the literature and found, that particularly in the English context both terms, are used interchangeably with no clear rationale. Although the terms are distinct, disability is considered a category of special educational needs on the basis of the New SEND Code of Practice. Various definitions are given to the two terms, and each concept can be underpinned by different interpretations and perspectives (Terzi, 2008).

According to the most recent SEND Code of Practice

> A child or young person has SEN if they have a learning difficulty or disability which calls for special educational provision to be made for him or her.
>
> A child of compulsory school age or a young person has a learning difficulty or disability if he or she has a significantly greater difficulty in learning than the majority of others of the same age, or has a disability which prevents or hinders him or her from making use of facilities of a kind generally provided for others of the same age in mainstream schools or mainstream post-16 institutions. (DfE, DoH, 2015: 15)

According to some (Solity, 1991; Corbett, 1996; Norwich 2013), this definition carries a negative conception of SEN as it refers to an individual with personal characteristics which differ significantly from the norm, from others in the same peer group, thus not enabling him/her to access facilities provided for others in mainstream educational settings. The term is used broadly, and is in tension with the ideology of inclusive education, which promotes the education of children with special educational needs or disabilities in mainstream inclusive schools.

The term of SEN was originally introduced with the aim of abolishing the categories of impairment, as analysed above, focusing on the abilities and strengths of children and addressing the dilemma of difference (Terzi, 2010). However, according to some, the introduction of the concept has failed to address that problem (Warnock, 2010) and has replaced the previous categories of impairment with a new super-ordinate category (Norwich, 2010). And within this category there are clear sub-categories of individuals with different needs and difficulties. Their identification has always been problematic, however, since students do not always fit into categorical portrayals of difficulty and 'not all disabilities give rise to special educational needs nor are all special educational needs a result of disability' (Florian, 2007: 12). A student with a physical disability, for example, may not have intellectual or learning difficulties, while a child who has difficulty in literacy or numeracy may or may not have dyslexia or dyscalculia. By including disabilities under the broad label of SEN, the needs of children with low incidence disabilities may be disregarded as policies are driven by issues relevant to the majority, i.e. children with moderate learning difficulties or behavioural, emotional and social difficulties (Keil et. al., 2006). The most recent definition fails to go beyond these conceptual problems and focuses on the differences of the child/young person, therefore on factors within the individual associated with the medical model of disability. Defining 'special educational needs' and 'disability' as well as identifying individual differences is directly influenced by the two contrasting frameworks: the 'rights-based' or social model and the 'needs-based' or deficit, medical model (Ravet, 2011).

2.1.3.2 Social and medical models of disability

When we refer to the medical model of disability in special education we are talking about the pathology of difference and we borrow terms from science such as "sickness, aetiology, specific treatment" (Corbett and Clough, 2000: 11) and also 'diagnosis, deficit, treatment, labelling'. The supporters of this model view disability and special needs as a result of individual difficulty or impairment and regard the use of categories as necessary to assure educational provision. More specifically, in relation to autism, which is the focus of the study, the use of the word 'autistic' to describe individuals on the autism spectrum is supported within this perspective and some individuals on the autism spectrum favour the use of categories and language that could be seen from the social model as disrespectful.

> I am not a 'person with autism'. I am an autistic person…. Saying 'person with autism' suggests that autism is something bad - so bad that it isn't even consistent with being a person. Nobody objects to using adjectives to refer to characteristics of a person that are considered private or neutral. (Sinclair 1998, cited in Cigman, 2007: xxvi)

By contrast, there is the view that this kind of language is in itself discriminatory and is inadequate since it focuses on the "within-child" factors and considers that the child is "faulty", without taking into consideration any environmental factors (Lindsay, 2003: 5).

Inclusion in education is strongly interlinked with, and based on, the social model of disability. The social model of disability has arisen as an 'antidote' to the medical model by locating the problem or 'deficit' experienced by people with disabilities, within the environment rather than within the individual (Ravet, 2011). According to Corbett (1996) the social model of disability 'demonstrates the ways

in which social, economic and cultural factors determine experiences of disability, rather than all problems arising from personal difficulties' (p. 63). The social model, which has prevailed in recent decades, supports the ideas of inclusion, of human rights and diversity. It starts from the premise that all students have an equal right to education and that diversity should be celebrated. The proponents of this model believe that every child has strengths and needs that should be welcome and that society should create ways to remove any barriers to learning. The use of categories is rejected on the basis that it pathologises difference (Ho, 2004). The social model has greatly influenced policy-making and has promoted the idea of inclusive education (Lindsay 2003). Thus, proponents of the social model aim to offer equal chances and reduce segregation irrespective of disability or other discriminating feature.

The main critique against the social model of disability and the rejection of categories is that it fails to take into account individual factors of difficulty and as a result, it fails to acknowledge and account for appropriate support. Harpur (2012) presents the example of a visually impaired person, for whom even if society 'would embrace any aspect of universal design', she or he would still experience some difficulties in everyday life due to his or her visual impairment. Similarly, Terzi (2010) brings to attention the example of hearing impairment which can 'become in itself a barrier to learning and hence a disability' (op. cit.: 37) unless support and resources are provided. However, by making provisions and adjustments to accommodate the needs of this pupil, hearing impairment despite remaining an impairment would probably not become a disability (Terzi, 2010). This confirms the argument of Norwich (2013) that the term 'special educational

needs' is currently used in government policies as well as by professionals interchangeably with terms such as disorder, deficit and impairment.

Despite the tensions and discrepancies around the terms used in the field of special and inclusive education explored above, they are used in current policies and practice to describe different needs and cater for these through different provisions. This links my discussion to the debate on the dilemma of difference.

2.1.3.3 Dilemma of difference

Another tension in the debate around inclusive schooling referred to as 'dilemma of difference' pertains to whether all students should be treated the same or through using different educational approaches, and how they should be included in one setting that at the same time provides differently though respecting individuality and celebrating difference. Florian (2007) argues that 'the problem is that inclusive education is not a denial of individual difference but an accommodation of it within the structures and processes that are available to all learners' (op. cit.: 10). She underlines that 'the process of accommodating difference as a mechanism of equal opportunity and as a fulfilment of the right to education for all is not generally disputed by educationalists. But the means to this end whether through special or inclusive education continues to be forcefully debated' (Florian, 2007:10). Similarly, according to a National Strategy document, providing an inclusive setting that promotes equality of opportunity does not mean that all children should be treated the same, but that the unique skills and abilities of each child should be recognised and developed (Inclusion Development Programme, 2010).

2.1.3.4 Location of schooling for pupils with special educational needs, disabilities and those on the autism spectrum.

Parallel to the contrasting positions in relation to disability and special education, over the last 30 years there has been an often hotly argued debate about the positive and negative aspects of including children identified as having special educational needs, particularly those on the autism spectrum, in mainstream settings. Although inclusion is supported by most educators, philosophers and policy makers, one of the main disagreements lies on the location of schooling and the case of children on the autistic spectrum is considered pivotal in the discussion. Some scholars have questioned whether mainstream provision is the most adequate for individuals on the autism spectrum (Jordan, 2008; Warnock, 2010) and teachers may find including pupils with autism challenging (Campbell and Barger, 2014). There are various perspectives pertaining to inclusive education and its policies and practices range from the 'full inclusionists' to less radical ones. The 'radical inclusionists' (Booth, Barton, Ainscow) define inclusion as a human right and believe in a 'single, inclusive system of education which is adaptable to the best interests of each and every child and from which the possibility of choosing segregation should be entirely removed' (CSIE, 2004). In other words, they argue for the closure of special schools viewed as segregating settings that promote exclusion and denunciate labelling as humiliating. On the other hand, the moderate inclusionists (Low, Lindsay, Cigman) support the idea that *some* children might benefit from mainstream education and believe that special schools mean integration and belonging (Cigman, 2008). As Cigman explains, 'the disagreement is practical but it is also conceptual, and it relates in part to the troublesome little word 'all' (Cigman, 2008: xvii). In other words, the supporters of full inclusion

maintain that inclusion can be effective when *all* students attend the same settings whereas others object to it.

Baroness Warnock, in her 2005 pamphlet, provides a critical retrospective overview of the Warnock Report (1978) and presents what she now sees as a problematic inheritance; 'the most disastrous legacy of the 1978 report, (was) the concept of inclusion (formally known as integration)' (op. cit.: 22). She expresses her doubts mainly regarding the inclusion of some children who fail to receive an education in a mainstream setting and argues that the school cannot be adapted to meet the needs of such children and create an environment in which these children can learn (Cigman, 2007). Warnock suggests the creation of small specialist schools open to the wider community who will cater for the students whose needs cannot be met in the large mainstream school (Warnock, 2010). Jordan (2008) argues that 'specialist' schools should be centres of research and teaching, exploring new approaches for students with ASC and working with the most extreme cases. Special schools should be regarded as a 'support for an inclusive system rather than an alternative to it' (op. cit.: 13).

Similarly, although he endorses the participation of all students in mainstream settings, Dyson expresses his reservations as to whether that presence is by itself 'enough to address the deep structural inequalities which many children experience' (Dyson in Clough and Corbett, 2000: 87). He questions what sort of education we offer to all students by maximising participation and removing the barriers towards inclusion. While he maintains that placing all students under the same roof and participating in the same learning procedure and experience is desirable, he also questions 'to do what and to what end?' (op. cit.: 87). More

recently, the Green Paper by the previous Coalition Government (2010-2015) stresses that:

> 'No one type of school placement (such as full inclusion in mainstream provision, special schools, or specialist units in a mainstream setting) is the most effective at meeting children's SEN [special educational needs]'. (DfE, 2011: 20)

The inclusion of students with special needs and disabilities and the choice of placement between special and mainstream settings can be contentious in terms of philosophy, policy and practice. Research has shown that there is little difference in the outcomes for children with special needs between the two settings although evidence seems to favour mainstream schooling in relation to academic achievement and social integration (Topping and Maloney, 2005; Bond and Hebron, 2016). In particular, 'socially, children with special needs in mainstream school, tend to be as well accepted as 'normal' children, but they nevertheless enjoy a fair degree of social integration, while learning to cope in a situation more akin to the outside post-school world than the protective environment of a special school' (op. cit., 2005: 7). According to an Ofsted survey 'there was little difference in the quality of provision and outcomes for pupils across primary and secondary mainstream schools and special schools. However, mainstream schools with additionally resourced provision were particularly successful in achieving high outcomes for pupils academically, socially and personally' (2006: 3).

Despite the different viewpoints and contradictory arguments there is no disagreement on the benefits and idea of inclusion. Obviously no one openly supports exclusion and discrimination. Norwich underlines that 'it is rare to find arguments against inclusion as it is rare to find arguments against democracy. Where disagreement lies is in the extent and nature of inclusion' (Norwich cited in

Cigman, 2008: 8). Inclusion can be present in every form of education and schooling and there is an ongoing debate on where inclusion is effective for all students: special, mainstream, special units in regular schools or special and mainstream schools sharing the same building. Therefore, although there is consensus that inclusion embodies the right of all children to education and learning, policies and practices differ and are continually evolving (for example, in England, the SEND *Code of Practice*, 2015, *Green Paper*, DfES, 2011). On the whole, 'inclusion is not a single movement; it is made up of many strong currents of belief, many different local struggles and a myriad forms of practice' (Clough and Corbett, 2000: 6). Inclusion is a contentious issue that affects policy, practice research and accentuates further the debate in the involved arenas. At the core of the debate lies the question of whether inclusion is effective for all pupils and how we can make it work. In order to fully describe the field of inclusive education and explore the different viewpoints and tensions, it is worth examining what hinders inclusion.

2.1.4 Barriers to inclusion

One of the salient features of the debate is the recognition that there are many barriers to inclusion. For instance, in advanced capitalist societies, there is a culture of competitiveness, effectiveness, achievement, and performativity that informs the ways in which the major social problems are conceived (Stamou, 2008). Those values that underpin our society and education have negative outcomes with regard to inclusion. As Barton (1997) highlights, there is a predominant 'set of values which celebrate individualism thereby making the

possibilities of cooperation, collaboration and difference, at an institutional and individual level, less desirable or possible' (op. cit.: 239).

It seems that we become atomised individuals who need to develop skills to survive in a rapidly changing world. This ignores what is fundamental to our human condition — plurality and the fact that we inhabit a world together — we are not isolated individuals. As a result, our thinking about whom we should interact with and how to behave towards our neighbour seems to have changed radically. Crucially, a new discourse and concepts by which we both think about and evaluate education have appeared such as 'quality', 'accountability', 'effectiveness' and 'targets' (Barton, 1997).

One outcome of this process, which has been named the 'marketisation' of education and the emphasis placed on league tables, is that it tends to marginalise a large number of students – with or without disabilities (Vlachou, 2004). The emphasis on competitiveness and effectiveness has made schools adopt a more 'fragmented, polarised and selective culture' (Barton and Slee, 1999: 5).

The current educational system focuses on academic achievement, and students are assessed and ranked according to their grades mainly in the core subjects; English, Maths and Science. As a result, students with SEN may face marginalisation based on what is seen to be valued. As Mittler (at interview conducted in 1998 cited in Clough and Corbett, 2000: 13) argues 'one of the greatest barriers to inclusion is our underestimation of the potential abilities of those we label as having SEN'. The current study examines the effectiveness of music and dance in promoting participation and inclusion and hypothesises that music and dance can be an area, in which pupils with autism can perform well, mainly in comparison to language

based tasks, area in which they may underachieve or require additional support. Being successful in an area in school can promote self-confidence and acceptance by others, which is at the core of the idea of inclusive education.

In policy, it seems problematic to reconcile an inclusive approach with the move towards raising academic standards. The concepts of 'inclusion' and 'achievement' are both at the heart of the government agenda in England and still problematic in many ways and highly contested (Black-Hawkins et al., 2007). Armstrong (1999) argues that special education has been 'the product of competing and often contradictory policy discourses'; the discourse of inclusion and the discourse of academic achievement (op. cit.: 9). In practice, on the other hand, those who do not manage to reach those academic standards may face the loss of self-esteem and rejection by teachers and peers. It seems therefore essential to balance the two agendas in policy and practice in order to create a school system where everyone will have the chance to excel in some aspect or another and where differences are celebrated and all students feel welcomed to the school community.

2.1.5 Inclusion, socialisation and friendship

Inclusion is about 'taking full and active part in school-life, be a valued member of the school community and be seen as an integral member' (Farrell, 2000: 154). Moreover, 'inclusion is about engendering a sense of community and belonging' (DfES, 2001: 3). Belonging is an important feature of inclusion which is strongly associated with positive social roles and behaviour and peer acceptance (Frederickson et al., 2007). As Warnock (2005: 15) points out 'the concept of inclusion must embrace the feeling of belonging, since such a feeling appears to be necessary both for successful learning and for more general well-being'.

It is therefore essential to promote the sense of belonging and encourage positive peer relationships if inclusion is to be achieved. As explained above, supporters of inclusive education envisage a setting where children learn together and where they create friendships with their peers regardless of individual differences (Jones, 2004). 'Segregation teaches children to be fearful, ignorant and breeds prejudice. Only inclusion has the potential to reduce fear and build friendship, respect and understanding. Inclusion promotes the accepting social relationships which are so important for full participation in society' (Low, cited in Cigman, 2007: 4). Intensive contact and interaction between students with and without disabilities are therefore considered as integral features of inclusion. As it was mentioned above, there is a disagreement as to whether inclusion can be successful and promote socialisation. Research has shown that students with SEN attending mainstream settings are less accepted than their classmates and more socially isolated (Koster et al., 2009). For children with autism, as explained in section 2.2.1, forming meaningful relationships and friendship can be particularly challenging. This important aspect of inclusion is at the core of the current study. The story of the intervention is written to emphasise the importance of friendship and all tasks require co-operation and inclusion. Emphasis is also given on whether pupils are included in the group and how they interact between them during music and dance tasks.

Parallel to the issue of inclusion and socialisation, there seems to be ambiguity concerning the concepts used in research and literature describing the social dimension of inclusion. Concepts such as social participation, social integration, social status and social inclusion are used interchangeably and almost synonymously (Koster et al., 2009). Social integration is described by Stinson and

Antia (1999) as ‘the ability to interact with, make friends with and be accepted by peers’ (op.cit.: 7). They stress therefore the importance of belonging, participation and friendship in the inclusion process. Similar views are held by various researchers (Gable et al., 1997, Boutot and Bryant, 2005, Cullinan et al., 1992). Social inclusion and social participation are also described using the concepts of relationship, cooperation, acceptance, interaction and initiation giving to friendship a pivotal role.

There are different notions of friendship but it can be generally defined as ‘a bond between two individuals that can be characterised by mutual preference for one another, a positive affective style, an ability to engage in social interactions, and an ability to last over time’ (Hurley-Guffner, in Koegel and Koegel, 1995: 120). Healy (2011) describes friendship as a curious relationship requiring emotional connection to another person. She argues that socialising is an important educational concept and that schools should address ‘the forming, nurturing and nourishing [aspects]of friendship’ (Healy, 2011: 441).

It is recognised that friendship is a fundamental element in a child’s overall development and well-being and enhances social communication, cooperation and cohesion. Children through friendship have the chance to develop and enrich their social skills and form meaningful relationships that can promote positive social interactions later in adulthood (Crockett, 1984). In addition, friendship tends to ‘promote social development, including complex forms of play, social communication, group entry, cooperation and impulse control’ (Hurley-Guffner, in Koegel and Koegel, 1995: 111). It seems therefore that friendship, and purposeful relationships with peers are integral to the life of an individual and should have an important place in education. Friendship, together with play, should constitute ‘an

educational goal, equal to literacy and numeracy' (Tully, 1998, cited in Mason, 2000: 95). Similarly, according to a survey undertaken by the National Autistic Society in relation to autism and inclusion, social skills training is secondary in schools compared to academic education and achievement. As a result, children may face bullying and exclusion at school which demands schools to implement inclusive policies in order to promote social inclusion and encourage cooperation, support and friendship among peers (Barnard et al., 2000).

Nevertheless, the role of friendship is not highly recognised in the educational curriculum but rather considered 'unimportant' according to Mason (2000) who underlines that 'the medical model of disability, in its fixation on the impairment, has simply ignored the issue of friendship in its definition of 'Special Educational Needs' (Mason, 2000: 94).

It seems therefore necessary to include the notion of friendship in the discussion about inclusion and its outcomes and undertake research in this area since there seems to be a lack of a clear relationship between social competence and the acceptance of children with disabilities. Only a few studies clearly demonstrate that social competence, defined as the acquisition of social skills, improves their acceptance' (Hurley-Guffner, in Koegel and Koegel, 1995: 114).

It is however acknowledged that peer interactions should be a fundamental element of interventions designed for children with autism. It has been found that children with autism of all ages and all levels of disability benefit from such programmes which often use typically developing peers to promote social development in children with autism **(**Rogers and Vismara, 2008). The opportunities for interactions between pupils with autism and their typical peers are also endorsed

by national reviews (NRC, 2001). The current study focuses on social interaction and seeks to explore how music and dance can promote socialisation for pupils with autism and their peers.

2.1.6. Inclusion and Autism

The issue of social inclusion in education is particularly pressing for children on the autism spectrum. The term describes a spectrum of abilities and challenges rather than a single condition, in which difficulties are mainly present in the areas of communication, socialisation and behaviour. The number of pupils identified with autism is increasing (Humphrey, 2008), and there is a growing concern regarding the nature of their educational experiences. It is interesting to note that just over half of students with ASC are educated in mainstream settings (Humphrey, 2008). More specifically the number of students in mainstream schools with a statement for autism has increased by 17%, more than for any other category (Office of National Statistics, 2004, 2009; Wilkinson and Twist, 2010). Humphrey (2008) suggests that pupils are often bullied and considered by their teachers as being 'difficult to teach'. ASC has been described as both a challenge and a model for inclusion in education (Jordan, 2008). Similarly, although it has been found that the inclusion of these children presents a considerable challenge to some teachers (Batten and Daly, 2006; HMIE 2006; Jones et al., 2008), it has also been suggested that inclusion has been a mixed blessing for many pupils on the autism spectrum (Molloy and Vasil, 2004; Lindsay, 2007; Humphrey and Lewis, 2008).

The situation is powerfully summed up in the statistic that children and young people with ASC are 20 times more likely to be excluded than those without SEN

(DfES, 2006). In addition, based on the findings of the National Autistic Society, many more children with ASC are excluded from school than the average and that many are not included at all (Warnock, 2010: 37).

According to Warnock (2010), as mentioned above, mainstream schooling seems inappropriate for the large number of students diagnosed with autism at some point along the spectrum. Warnock goes on to argue that it is necessary to 'raise the question what their "inclusion" in mainstream school amounts to, and whether it is experienced by them as a good. The reality seems to be, in many cases, that it is experienced as a 'painful kind of exclusion' (Warnock, 2010: 35). Based on this, Warnock suggests that children with autism will benefit from the creation of small specialist schools, which will accommodate their needs as opposed to mainstream settings.

On the other hand, according to other positions, the 'unsuccessful' inclusion of children with ASC in mainstream schools needs not reside in the nature of autism but on several external factors. A poor understanding of the condition amongst classroom professionals and a lack of awareness of the pedagogical approaches and adaptations to teaching and the classroom environment can prevent successful participation and inclusion (Ravet, 2011).

As Jordan (2008) stresses, the main positive outcome of inclusive mainstream education is the benefits gained from interacting and with typically developing peers. Interestingly however, many of the approaches, designed to enhance inclusion and used often by non- trained support assistants, isolate the child from the peers. For instance, this would be a case when an adult takes the student outside the classroom to offer one-to-one support or intervention based on

TEACCH, ABA, or specific communication or sensory integration programmes. Jordan goes on to state that when a child is different or has 'special needs', additional provision is in place to enhance access and co-operation with other children, even though the success of such resources in achieving this aim has not been tested (Jordan, 2008).

It seems therefore that the relationships built between students with ASC and their peers can constitute both 'a barrier and an enabler to their successful inclusion at school' (Humphrey, 2011: 43). As stated above, the isolation of students with autism by their peers might be due to the difficulties that they encounter in communication. However, with strategies focusing on interaction and aiming at peer acceptance and friendship, exclusion can be counteracted. In order to gain a better understanding on the difficulties that children with ASC may face in school it is vital to look more closely into autism, the definitions given to the condition, how diagnosis is made and the different approaches used to help them enhance communication and socialisation, main focus of the current study.

2.2 Autism spectrum condition (ASC)

2.2.1 Defining and understanding the nature of Autism

Autism, a term encountered frequently in educational agendas, is challenging and contentious. Although extensive research has been carried out since the original discovery of the condition and our understanding of it has increased, autism remains largely unidentified. The nature, origin and even the definition of autism are constantly debated (Frith and Hill, 2003).

Different definitions can be given in order to explain autism and its diagnosis remains a contentious issue (Happé, 1994). According to the National Autistic Society, 'autism is a lifelong developmental disability that affects how a person communicates with, and relates to, other people. It also affects how they make sense of the world around them' (NAS website, 2011). It is currently assessed and diagnosed behaviourally. As Frith and Hill (2003) highlight, autism has 'a neurological basis in the brain and genetic causes play a major role'. However, the precise causes and specific biological markers are still not known (op. cit.:1). What we do know however is that its clinical picture can vary in severity and can be affected by many factors, including education, ability and temperament (Frith and Hill, 2003). Autism affects 1/100 individuals, 600,000 in the UK with the ratio of male to female being 4:1 (Happé, 2011).

The term was first introduced by the psychiatrist Eugen Bleurer near the beginning of the 20th century referring to 'a particularly striking disturbance in schizophrenia namely the narrowing so extreme that it seemed to exclude everything except the person's own self. This narrowing could be described as withdrawal from the fabric of social life into the self. Hence the words 'autistic' and 'autism' from the Greek work "autos" meaning self (Frith, 2003: 5). Pioneers Leo Kanner (1943) in America and Hans Asperger (1944) in Vienna were the first who attempted to provide a theoretical explanation of autism and published detailed case descriptions of the disorder. They both claimed that a fundamental biological disturbance was present from birth (Frith, 2003).

Since then, a good deal of research has been carried out internationally in order to define autism, explain its causes, provide diagnostic criteria and suggest interventions and treatments. A milestone in the research regarding autism is an

extensive epidemiological study by Lorna Wing and Judith Gould (1979) who suggested that autism is a continuum and should be seen as a spectrum of difficulties. Similarly, Happé (1994) underlines that the picture of autism seems to vary across and within individuals according to age and abilities and is defined as a developmental disorder. Therefore, the term 'Autism Spectrum Disorder' is currently used to describe the common features of individuals with autism despite their differences (Jones, 2002). Autism spectrum disorder is used to refer to autism and a number of related medical diagnoses such as Asperger's syndrome, Rett's disorder and 'pervasive developmental disorder, not otherwise specified' (American Psychiatric Association, 2000; World Health Organisation 1995). The common element in the above disorder is a set of diagnostic criteria based on the 'triad of impairment'.

The 'triad of impairment' concept introduced by Lorna Wing (Wing and Gould, 1979), despite being contested by many researchers (Happé et al. 2006) is currently a frequently used theory that describes autism and provides its diagnostic criteria. According to this theory, difficulties are presented in the areas of communication, socialisation and imagination and to diagnose autism these difficulties must be present in all three areas. It is the 'co-occurrence of the triad [that] can define autism' and not only differences in one area (Happé, 1994:103).

As mentioned above, autism is diagnosed behaviourally. However, the National Initiative for Autism: Screening and Assessment Working Group (NIASA, 2003) have generated guidelines for identification, assessment and early interventions for preschool and primary school students with autism. They present the following features in children of primary school age as signals that should alert staff to the possibility of ASC and initiate discussion with parents about referral for further

assessment. These are: communication impairments, social impairments, impairments of interests, activities and behaviours and other factors (NIASA, 2003: 28). In addition, guidelines were developed by the DfES (2002) also based on the triad of impairments and highlight that all children with ASC 'share a triad of impairments in their ability to: understand and use non-verbal and verbal communication, understand social behaviour which affects their ability to interact with children and adults and think and behave flexibly – which may be shown in restricted, obsessional or repetitive activities' (op. cit.: 9).

Likewise, according to the previous Diagnostic and Statistical Manual (DSM) of the American Psychiatric Association (DSM-IV-TR, 2000: 74) the following criteria were applied until recently for the diagnosis of autistic disorder:

a. Qualitative impairment in social interaction,
b. Qualitative impairment in communication
c. Restrictive repetitive and stereotyped patterns of behaviour, interests and activities appropriate to developmental level

Happé questions whether autism is indeed a monolith or a composite of difficulties in one of the areas of the triad or more. She argues that although difficulties may cluster together, the majority of autistic children have difficulties in one area (Happé et al., 2006). They suggest that research should abandon a monolithic explanation for the core aspects of autism and examine each area of the triad separately. They highlight that 'abandoning the search for a single cause for a single entity of autism may also mean abandoning the search for a single "cure" or intervention' (op. cit.: 1220).

Another critique of the triad of impairments resides on the fact that sensory phenomena that are reported in relation to children with autism but are not included in the diagnostic criteria. Those phenomena relate to hypo- or hypersensitivity to several stimuli experienced by the five external senses (sound, sight, smell taste and touch) (Frith, 2003).

However, sensory processing difficulties are now included in the diagnostic criteria set out by the most recent publication of the DSM-V (APA, 2013) under Autism Spectrum Disorder 299.00 (F84.0). Criteria are divided in two main categories:

A. Persistent deficits in social communication and social interaction

1. Deficits in social-emotional reciprocity
2. Deficits in nonverbal communicative behaviours used for social interaction
3. Deficits in developing, maintaining, and understanding relationships

B. Restricted, repetitive patterns of behaviour, interests, or activities

1. Stereotyped or repetitive motor movements, use of objects, or speech
2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns or verbal nonverbal behaviour.
3. Highly restricted, fixated interests that are abnormal in intensity or focus
4. Hyper- or hypo- reactivity to sensory input or unusual interests in sensory aspects of the environment.

The triad of impairment describes the features of the condition that but it does not explain why they are present in individuals with autism.

2.2.2 Main cognitive theories

Since Kanner's definition of autism many theories have attempted to explain the causes behind autism, but still it remains contentious. It is certain however that autism cannot be explained by psychogenic theories which emerged in the '60s, i.e. the notion of 'refrigerator mothers' introduced by Bettelheim (Bogdashina, 2005). Those theories blamed parents, and especially mothers, for the distant behaviour of their children supporting that the lack of affectionate environment

and attitude of parents caused children's withdrawal. In the last decade, extensive empirical research has been undertaken around autism, guided by the three major cognitive theories also referred to as core deficit approaches – theory of mind, central coherence and executive function – providing explanation of the characteristics of autism and supporting evidence regarding the relation of behaviour and brain (Frith and Hill, 2003). As Happé (2011) argues there is no single neurocognitive explanation of autism. Therefore, those theories, presented in the following sections, do not explain autism but provide a good understanding of the core features of the autistic condition and set the ground for further research and potential interventions.

2.2.2.1 Theory of mind

The theory of mind theory (ToM) also referred to as 'mindblindness' or 'mentalising failure' has been widely experimented and is considered as one of the robust theories of autism (Frith and Hill, 2003). This theory argues that individuals with ASC have difficulty in understanding the thoughts, beliefs, emotions and intentions of themselves and others. Baron-Cohen et al. (1985) first argued that the social and communication difficulty encountered by individuals with autism could be a result of an impairment in mentalising ability; ability to 'mind-read' or attribute mental states to others (Frederickson and Cline, 2009). They therefore designed an experimental false belief test (the Sally-Ann false belief task) to test whether children with autism could understand false belief, i.e. someone else's belief that could be different from their own. This study led to various research projects that have examined and refined the ToM hypothesis and tested its predictions. Autistic children have been found to have difficulties in many areas

that are consistent with a ToM deficit. For instance, children with ASC make little use of 'mental state' language (words like 'think', 'know', 'believe', 'feel') in their speech and have difficulties in using and understanding metaphors or sarcasm (Burton, 2011). In addition, it has been found that children and adults with autism may have difficulties in other areas of social behaviour such as recognition of faces (Frederickson and Cline, 2009).

Although research has found that, on the whole, individuals with autism fail ToM tests, 20% pass them. This might be explained by the fact that along the spectrum there are different profiles of abilities or difficulties. It questions however the theory of a core ToM deficit that all individuals with ASC share. One disadvantage of the false belief test is that it is only applicable for participants who can understand task instructions, which therefore rules out testing profoundly autistic participants (Burton, 2011).

Despite the critiques of it, the ToM remains a robust cognitive theory that explains in part the difficulties that individuals with autism have in the areas of communication and socialisation. Nevertheless, it does not provide explanation for the other features of the 'triad' such as impaired imagination as well as repetitive and restrictive patterns of behaviour and activities. The non-social features of autism are explained by the 'central coherence theory'.

2.2.2.2 Weak central coherence

The theory of 'weak central coherence' proposed by Frith (1989) and developed later by Happé (1999) aimed at explaining the non-social features of autism, which include strengths and deficits. They mainly comprise a restricted repertoire of repetitive behaviours, 'insistence to sameness' as defined by Kanner as well as 'a

markedly uneven pattern of intelligence such that tests tapping factual knowledge, rote memory and focused attention to details can lead to peak performances while tests tapping 'common sense' comprehension and working memory or strategic tasks planning can be surprisingly poor' (Frith and Hill, 2003: 8). 'Central coherence refers to an information processing style, specifically the tendency to process incoming information in its context: that is pulling information together for higher level meaning' (op. cit.: 9). This theory supports the notion that individuals with autism exhibit weak central coherence and therefore focus on the details and fail to generalise, to see the whole picture. South et al. (2007) for instance looked at how repetitive behaviours in young male individuals with autism could be linked with central coherence and found that there are actually associated with executive function measures, described in the following section. The main critique therefore of the central coherence theory is that although it has stimulated research and applies for some features of autism it fails to apply as a universal theory accounting for all aspects of autism (Bogdashina, 2005). The original idea by Uta Frith has been challenged and now it seeks no longer to explain all areas of autism but rather focuses on one aspect of cognition (Rajendran and Mitchell, 2007).

2.2.2.3. Executive dysfunction

Executive function is another theory that has gained ground and aimed to account for all aspects of autism is executive dysfunction proposed by Sally Ozonoff (1995). It refers to 'the ability to free the mind of the immediate situation and context to guide behaviours through mental models or internal representations' (Bogdashina, 2005: 50). Deficient executive function relates to deficiency in planning, organising and problem solving. Children with autism may find it

difficult to remain on a task but alternatively they might find it difficult to stop until they finish. As Frith and Hill (2003) explain, deficient executive functioning theory aims to address the rigidity and perseveration exhibited in individuals with autism. Autistic people have difficulty initiating new tasks and have a strong liking for repetition, routines and rituals. The opposing position to this theory is that there is a lack of consensus as to which features of executive function are typical of autism. And most importantly deficient executive function is not exclusive to autism but is found to be present in other clinical conditions (Hill, 2004).

2.2.2.4 Sensory processing

Although not considered to be a core deficit theory of autism, sensory perceptual theory is gaining ground and has led to increasing research. Difficulties in sensory processing are also as mentioned above, included in the diagnostic criteria for ASC. According to this theory, individuals with autism seem to have sensory impairments in one or more of their senses, being hyper- or hyposensitive (Bogdashina, 2005). They might, in other words, have difficulty in processing sensory information such as sound, smell, touch and taste. This can impact profoundly their everyday life, including school life, as we will explore in more detail in the following section. Children with autism often struggle with filtering and accommodating to sensory stimuli in order to develop an adaptive response (Tomchek and Dunn, 2007)

2.2.3 Autism and school life

The issue of inclusion has become crucial in the recent years and there are significantly more and more pupils with ASC in mainstream education. It is certain that providing effective education for children with autism in mainstream settings

can be challenging and we know very little about how to achieve this (Davis & Florian, 2004). Research has shown that pupils on the autism spectrum attending mainstream schools may face bullying, isolation and exclusion (Bauminger and Kasari, 2000; Connor, 2000).

In particular, according to Jones (2002), schools can be a very challenging environment for children on the autism spectrum; for some it can be even described as a scary and chaotic place. Children with autism may face various difficulties during the learning process and their daily routine at school. Due to their inability to perceive language and learn social skills the same way as their peers they might find it difficult to understand the teacher's instructions and comply with certain 'rules' of the classroom, such as to raise their hands before speaking or to wait for their turn when they are involved in a conversation. This can affect all social interaction opportunities and engaging in activities that involve working with others, turn taking and listening to others. Pupils with autism, as discussed above, may also find it difficult to understand and communicate their emotions as well as the emotions and feelings of others. This by itself, and accentuated by all other areas of difficulty, can cause anxiety which can also lead to challenging behaviour.

According to Powell (2000), a student with autism may find it difficult to cope with changing experiences since they have to rely on rote memory to seek meaningful explanations for social situations that cannot be acquired intuitively. On the contrary, they have to learn them without having social understanding (Jordan and Powell, 1995). Consequently, the load on memory of students with autism is increased and this makes learning general knowledge even more difficult. Pupils with autism may find change to an expected routine difficult to manage, and

generalising knowledge can also be problematic. They may have very narrow interests and fixations which can impact on accessing learning and participating in group activities. Sensory sensitivities can also affect their learning and inclusion and present difficulties throughout the day. For instance, break times and lunchtimes can specifically be challenging as are unstructured times during which there is usually a loud noisy environment, and individuals with autism may also have very restricted diets. In short, autistic students that are included in a regular classroom might have several difficulties during learning and also during the wider day at school.

It has been shown that, especially for children with disabilities, interaction with neurotypical peers improves their social behaviour and overall development (Doveston and Keenaghan, 2006). However, for children with ASC this might be challenging due to the nature of their disability. As already mentioned, they have problems with socialisation and with using appropriate behaviour, and may have little or no recognition of others' feelings. Boutot (2007) adds that due to their possibly limited speech and their poor reading of social cues, making friends can become very challenging. The social dimension of development is clearly of great significance in autism. At a superficial level, children with autism are often described as being socially inept; at a more profound level it is clear that their difficulties within the social domain of development have a pervasive effect on all aspects of their learning and their behaviour (Jordan and Powell, 1995: 13). Another barrier can be their limited variety of interests, their preference to sameness as well as their lack of creative play.

On the other hand, research has found that although many educators in mainstream schools are strong supporters of inclusion, they do not feel that they have the

necessary training and support to effectively provide for such pupils (Ministerial Advisory Committee for Students with Disabilities, 2000; Humphrey and Parkinson, 2006).

Furthermore, it is hard to define the precise and unique educational difficulties of students with autism, as well as their common needs that support specialist provision (Alderson and Goodey 1999: 260). Although the inclusion of students with ASC can be a challenge for schools and teachers, it has been found that their inclusion has been beneficial for all students involved (Molloy and Vasil, 2004; Lindsay, 2007; Humphrey and Lewis, 2008). Successful inclusion of such pupils in mainstream education is both a challenging and rewarding endeavour and as Ochs et al. (2001) state, 'physical placement of children [on the autism spectrum] … in inclusive educational settings *alone* is not sufficient' (p. 400). Evidently, it is essential to undertake research on how such challenging issues can be best resolved in everyday practice (Humphrey and Parkinson, 2006)

As a result, what kind of provision is most suitable and beneficial for pupils on the autism spectrum?

The choice of educational setting and appropriate intervention is based on different factors such as children's age, their strengths and weaknesses, the presence or absence of additional learning disabilities (Jones, 2002), the availability and suitability of provision in the local area (DfES/DoH, 2002), the views of the parents and child, and the views of other key stakeholders and professionals (DfES, 2001). Taking into account these parameters, a child or young individual with ASC may be placed in a mainstream school, a school for children with moderate or severe learning difficulties, another type of special school or unit, a

specialist unit or school for autistic pupils (run either by the Local Authority or an independent organisation), or receive home-based programmes (Humphrey and Parkinson, 2006)

Therefore, currently the provision for students with autism varies in the educational system of England according to the area and the Local Authority and parental choice. Firstly, these students can be placed in special schools specifically for children with autism. As Wall (2004) states, the specialised knowledge and experience of the staff employed in this field can be a significant advantage of this kind of provision. The practitioners in most cases have the skills to understand and cater for the needs of these pupils and provide them with a curriculum and activities that can ensure achievement and progress. 'The whole ethos of the setting will revolve around appropriate organisation and supportive features for the children' (op.cit.: 134). For some children a specialist environment is still the best to promote their own inclusion (Barnard et al., 2000).

In addition, similar advantages can be observed in the special units based either in mainstream or special schools. However, these units cannot be considered inclusive since children with special needs are not included in the regular classroom but are placed in segregated settings in the mainstream establishment. Nevertheless, the idea of including children with special needs in mainstream classrooms is increasingly being applied (Humphrey, 2008). This process enables students with autism to participate actively in their community and provides them the opportunity to develop their skills and potentials and create relationships with their peers. However, according to some, what matters most is not the type of the school or its title but the quality of the education offered and the expertise of the staff (Wall, 2004). Similarly, 'the most important factor in determining the best

outcomes for pupils with learning difficulties and disabilities (LDD) is the quality of the provision' (Ofsted, 2006: 2). In particular, this report by Ofsted found that 'effective provision was distributed equally in the mainstream and special schools' (op. cit.: 2). Nonetheless, the best outcomes were produced in mainstream schools with additional resourced provision. It was found that even pupils with severe difficulties and challenging behaviour taught in mainstream settings could make the same progress with those educated in special schools when they had the support from experienced staff and specialist equipment. Similarly, Barnard et al. (2000), highlight that evidence shows that even children with severe autism can benefit from inclusion in the mainstream school.

The current concept of inclusion invites the whole educational system and society to manage change and welcome all children by reducing segregation irrespective of disability or other discriminating features. It is certain however that inclusion is complex, gradual and like any change is a process. The time needed for effective outcomes is uncertain and dependent on different understandings, experts and context (Ainscow, 1999). Finally, the debate for the choice between special and mainstream school is likely to continue unless the school system manages to cater for the needs of all children. The focus should not be on 'where an individual is educated or receives services or support; it is on the quality of such a service or support' (Barnard et al., 2000: 6).

2.2.4 Main therapies and strategies for pupils with autism

The aim of this section is to provide a critical overview of the main strategies designed for autism. There is currently extensive and varied research relating to children and young people on the autism spectrum. The National Research

Council (2001) identified four main distinct literatures within this corpus of studies: (1) research seeking to describe and explain the neurological, behavioural and developmental characteristics of individuals on the autism spectrum; (2) research associated with early diagnosis; (3) research assessing the effects of comprehensive 'treatment' programmes designed for individuals on the autism spectrum; and (4) research examining the outcomes of specific approaches that focus on certain aspects of an individual's behaviour, such as social skills (Humphrey et al., 2006).

There is an extensive range of therapeutic approaches designed for individuals on the autism spectrum. These can vary from medical ones such as medication and psychotherapy to more behavioural, educational and alternative treatment programmes such as:

> Aromatherapy, art therapy, behaviour modification (for teaching skills or managing behaviour), computer-assisted learning, Daily Life Therapy, drama therapy, Early Bird, early intensive behavioural intervention (e.g., Applied Behaviour Analysis), facilitated communication, floor time (the Greenspan approach), Makaton signing and symbols, massage, the Miller method, music therapy, Option method, picture exchange communication system (PECS), sensory integration, Sherborne movement, social stories, speech and language therapy, treatment and education of autistic and communication handicapped children (TEACCH) (Humphrey, N. and Parkinson, G., 2006)

These interventions can often be competing, and although extensively used for a period of time, have been based on no or very little empirical evidence (Preis, 2007; Humphrey and Parkinson, 2006).

These approaches and programmes can be divided into two main categories: comprehensive and focused intervention. The latter, places emphasis on specific aspects or skills such as eye contact, joint attention or imaginative play (Dempsey

& Foreman, 2001; National Research Council, 2001). They occur for a limited time period and aim at producing a behavioural or developmental change of the targeted aspect. (Odom et al., 2009).

Comprehensive approaches or comprehensive treatment models (CTM) can be defined as those that address core deficits in *autism*, prioritise early intervention, provide intensive intervention, actively involve families, and utilise experienced and trained staff (Rogers and Vismara, 2008; NRC, 2001). They occur over an extended period of time, often for years and are intensive (up to 25 hours per week) and have multiple components (Odom et al, 20009). Among the most popular and commonly used comprehensive approaches in the UK are ABA (Applied Behavioural Analysis) (Lovaas Institute for Early Intervention, 2003) and TEACCH (Treatment and Education of Autistic and Related Communication Handicapped Children), (Division TEACCH, 2003).

2.2.4.1 ABA

ABA has been used as an intervention program for individuals with autism with the aim to develop a variety of skills ranging from academic to self-help and communication skills but also to target inappropriate or aggressive behaviour. ABA is based on the assumption that autism is a syndrome of behavioural deficits and that might have a neurological base, but can be changed with the use of carefully controlled environments (Lovaas & Smith, 1989). In other words, the underlying causes of the condition are considered secondary in the therapeutic process and the emphasis is on modifying the behaviours that can be detrimental to the individual with autism and those around. This is achieved by teaching small, measurable units of behaviour systematically. The different skills either simple such as eye contact or more complex social interaction processes are examined and

then divided into small steps which are taught often in a one-to-one situation, by introducing a specific cue and by using physical prompts if necessary. Appropriate responses to cues are rewarded by reinforcing situations, which make the response more probable to happen again. Inappropriate behaviour is discouraged with the aim of being eliminated and replaced by an alternative appropriate behaviour (Dempsey et al., 2001). These reinforcing techniques have been however criticised as being sometimes misused or for being ethically unsustainable, overly clinical and inhumane (Dempsey at al., 2001). Other deficiencies of the ABA programme lie in the fact that there is no sufficient justification as to why some children show dramatic improvements while others do not, and that comparisons with other competing treatments are lacking. One major drawback of this approach is that is exclusively undertaken on an individual basis (person with autism / therapist) and fails to take into the account the social dimension of interaction and communication.

2.2.4.2 TEACCH

TEACCH (Treatment and Education of Autistic and related Communication Handicapped Children) is a widely used intervention programme established in North Carolina in the 1960s by Schopler (Cox & Schopler, 1993). It uses mainly behavioural strategies to teach self-care skills and to manage inappropriate behaviour (TEACCH, 1998). The project draws on structured environments specifically designed to encourage children to use their skills and interests through organised teaching. The focus of the programme is on individualisation, structured learning, and environmental adaptation (Humphrey et al., 2006). The latter are achieved by providing a daily timetable, visual support to aid children's transitions between the different locations and activities, which include group tasks but also

individual activities at the workstations, separated areas from the rest of the classroom. Therefore, the approach provides a highly structured visually based environment in terms of space and daily routine, which offers sequence and predictability (Mesibov, 1997). To summarise, the main principles of the programme are: a. structured provision in terms of environment and teaching method, b. focus on visual perception, memory, repetition and independence in a range of learning experiences and everyday situations, and, c. focus on parents' participation and training of practitioners.

The TEACCH programme has been extensively evaluated in a variety of research studies over the last 30 years measuring parental satisfaction, staff ratings of progress, cognitive status and developmental behaviours. In general, the framework has presented positive outcomes and it appears to be effective with autistic individuals (Dempsey et al., 2001). However, there has been very little evidence of implementation of the programme in inclusive education (Panerai et al., 2009).

These approaches are mainly behavioural and educational intervention programmes that aim at developing social, academic, and communication skills. They are often put in place in conjunction with other programmes, for instance the ones that focus on language and communication or the sensory needs of children with autism. They are fundamentally designed to be used on a one-to-one basis and therefore may not be appropriate to use in an inclusive setting with a group of learners with a range of abilities and difficulties.

2.2.4.3 Sensory integration therapy

The aim of sensory integration therapy is to facilitate the brain's ability to process sensory input. It is based on the assumption that many individuals with autism can

be helped through stimulation of the senses (Bogdashina, 2003). Delacato and Ayres established the main principles of this approach, which is mainly administered by trained occupational therapists. The professionals assemble a sensory profile for each child in order to select the appropriate method, designed to address the individual needs of the individual. A sensory diet programme is compiled and may include different techniques such as: deep pressure, joint compression, tactile play and vestibular activities (op. cit.).

In general, evaluations of comprehensive approaches seem in many ways problematic as there is a range of methodological issues that may restrict the justification of their effectiveness. The main critique in relation to comprehensive approaches is the use of IQ as a primary measure of treatment efficacy (Humphrey et al, 2006). IQ tests present significant limitations in measuring outcomes for children on the autism spectrum mainly because it is a variable which is the most unlikely to change over time (Charman & Howlin, 2003).

2.2.4.4 Specific skills interventions and research

As mentioned above, parallel to the 'comprehensive' approaches to autism, there is a wide professional literature concerning interventions that seek to enhance specific behaviours, skills or areas of development. These strategies can be classified in two categories: (1) social communication and social development, and (2) reducing challenging/problem behaviour (Humphrey et al., 2006). Since communication and socialisation are the core deficits in the diagnosis of ASC, extensive research has been done on specific interventions in these areas (Goldstein, 2002; Krasny et al., 2003; McConnell, 2002)

In an article, Odom and colleagues (2010) looked at research on ASC interventions by identifying 30 comprehensive treatment models (CTMs). These models have

published manuals or programme descriptions, address multiple developmental domains, are intensive, and have clear theoretical or conceptual frameworks. It is no surprise that the majority of these CTMs were based on applied behaviour analysis (ABA), and even those that did not identify ABA as the theoretical framework of their model relied on behavioural principles to teach essential skills to young children with ASC (e.g., Dawson et al., 2009).

This section of the chapter aimed at providing an overview of the approaches currently used to support individuals with autism and of the main research undertaken in this area. Although the different strategies are often competing and claim their unique effectiveness, there seems to be no single paramount intervention. It is important for professionals as well as parents/carers to realise that there is no 'universal panacea' (Howlin, 1998: 308). In fact, educators rarely adopt a 'single approach' (Siegel, 2000). As Heflin and Simpson (1998) underline, 'there is not a single method that should be exclusively used to meet the varied needs of children and youth with autism and their families … the most effective programs for students with autism are those that incorporate a variety of best practices' (p. 207). On the contrary, practitioners use a range of approaches and strategies and modify them according to each individual, setting as well as several internal and external factors (Stahmer et. al, 2005).

According to the findings of the National Research Council (NRC) report (2001), which reviewed both specific programmes and comprehensive approaches, intervention should start as early as autism is identified and be systematic, intensive and respond to the individual strengths and weaknesses of the child. One to one instruction between teacher and student as well as involvement of the parents was also suggested by the American Academy of Paediatrics' (AAP)

clinical report (2007). Finally, ongoing reflection, evaluation and evidence collection for assessment was strongly recommended. It is important though to mention that although these reports took into account various comprehensive programs for young individuals with autism, neither report indicated the specific approaches to treatment (Strain, Schwartz and Barton, 2011).

The above section provided a brief overview of some indicative approaches used for children with autism and applied in special educational settings. As already mentioned, no single intervention can be effective when used on its own and often a combination of methods is implemented, also in conjunction with approaches focusing on self-care, sensory needs, behaviour and communication (SCERTS, Team Teach, Intensive Interaction). For the purpose of this study, the section below focuses on how music and dance can be used for children with autism, referring to similar studies undertaken in the field mainly in relation to their socialisation and inclusion.

2.3 Music and Dance

2.3.1. The role of arts (in education and therapy)

The role of the arts in education as well as in society has gained ground over the last decade. There has been a huge variety of initiatives aiming at promoting the use of the arts to raise achievement in schools (Karkou and Glasman, 2004). These include collaborations between the Arts Council and different bodies such as the Qualifications and Curriculum Authority (QCA). However, the new Government (elected in 2010) has strongly questioned the contribution of arts education by reducing support and resources for the arts subjects and by focusing instead on the core areas of the curriculum (Adams, 2011). Although, more recent White Papers

(Department for Education 2010a, b and c) seem to neglect the arts when reviewing the national curriculum, previous government policies and reports depicted the idea of the impact of arts in relation to social inclusion and their role of promoting inclusion in schools (Arts Council Reports 2003). According to Wetz (2004: 70), 'arts and inclusion need to be central to the narratives of our schools'.

Practitioners of arts therapies had a strong belief in the therapeutic impact of arts, which has been demonstrated in their work since the early days of the disciplines (Karkou and Sanderson, 2001). Therefore, similar to the arts in education programmes, arts therapies have also developed as therapeutic interventions in community as well as educational settings and are implemented to support children with disabilities and special educational needs, including those with autism. Among the reasons why arts either in education or therapy can be effective and appropriate for the autistic population is the emphasis on non-verbal interaction between teacher–student/client–therapist. Specifically, in the therapeutic field the focus on non-verbal communication is based on the examination of mother–infant relationships and similar psychological studies (Karkou and Sanderson, 2001). Pavlicevic (1995) explored the similarities in the communication between the client–therapist and mother–infant, arguing that interaction in therapy follows a similar pattern of the way that parents interact and engage with their babies using non-verbal cues. Similarly, Intensive Interaction, an approach to teaching the pre-speech fundamentals of communication to children and adults who have severe learning difficulties and/or autism and who are still at an early stage of communication development, was based to a great extent on the scientific research of caretaker-infant relationship and on the way in which human beings learn to communicate during the first year (Intensive Interaction Institute, 2013). We can

hypothesise that music and/or dance can be used similarly to promote communication, interaction and therefore inclusion in the current project.

In the present study, music and dance are used separately but also together and will also accompany language, in the form of a story in an educational setting and framework, looking at engagement, interaction, cooperation and inclusion with young children including those with autism. Although this research is undertaken within an inclusive educational framework, it seems beneficial to explore the relationship between arts therapies and education, looking at their similarities and differences. Besides, as seen above, most of the research around music/ dance and children with autism has been in the therapeutic field.

2.3.2 Therapy vs. Education

Despite the fact that the arts therapies derive from and are closely linked to arts in education, they are classified as separate disciplines, with distinct professions and approaches (Karkou and Sanderson, 2000; 2001). It is acknowledged that clear differences exist between the two modalities, of education and therapy, in terms of their perspectives, purposes and practices (Dunphy and Scott, 2003).

Extensive literature describes the several differences between them (Payne, 1992; Bunt, 1994; Warwick, 1995; Meier, 1997) in many different areas such as: aims (artistic v. therapeutic), methodology (instruction vs. non instruction), focus, (artistic/aesthetic vs. emotional/social emphasis) and evaluation (monitoring of artistic/aesthetic improvement v. monitoring of all artistic/aesthetic changes) (Karkou and Glasman, 2004). According to Mettler (1990), creative arts and therapies have very distinct aims and motivations. ‘While the goal of therapy is the healing of illness, the goal of art is the creation of a satisfying form. Therapy is

utilitarian [whereas] art serves no purpose other than providing joy in the creative work itself' (op. cit.: 96). Furthermore, as Karkou and Glasman (2004) highlight, arts teachers and arts therapists use different approaches and choices in terms of space (open space v. private space) and grouping of students (large numbers v. one-to-one and/or small groups). Finally, teachers and therapists receive different training, qualification and professional registration (Karkou and Glasman, 2004.)

It is important to mention that, despite the differences described above, there is a strong link between the disciplines of education and therapy. According to Karkou and Sanderson (2001), especially in the field of dance in the UK, dance movement therapy derives from dance education with a modern orientation inspired by Laban and pioneers dance therapists were physical education teachers with a strong interest in dance and special needs education.

Despite the differences, arts therapies and arts education can be beneficial to a specific population and for determined purposes. It also seems that the two disciplines 'may not be distinguishable so much by the nature of the activity that is undertaken as by their underlying aims and intentions' (Ockelford, 2008: 41). They can therefore complement each other and their proponents collaborate with the aim of creating a framework that will empower arts role in community, health and education sectors. Especially in the field of dance and special educational needs, it seems that the distinction between therapy and education is blurred Karkou and Sanderson (2001).

There is a need therefore to promote research activity in the area of arts therapies. Although it is a fast developing sector, research activity undertaken in schools is currently 'insufficient and intermittently documented' (Karkou, 2010: 15).

2.3.2.1 Music therapy and education

> Music therapy is the professional use of music and its elements as an intervention in medical, educational and everyday environments with individuals, groups, families or communities who seek to optimize their quality of life and improve their physical, social, communicative, emotional, intellectual and spiritual health and wellbeing. Research, practice, education and clinical training in music therapy are based on professional standards according to cultural, social and political context (World Federation of Music Therapy, 2011).

Paul Nordoff and Clive Robbins examined the effects of music therapy on children, in particular those with complex physical and learning disabilities (Nordoff and Robbins, 1971, 1977). They support that therapy that lies in music can have a far-reaching effect upon the development of children who bear the handicaps of mental impairment, emotional disturbance or physical disability (Nordoff and Robbins, 1971: 15).

Alvin (1975) defines music therapy as 'the controlled use of music in the treatment, rehabilitation, education and training of children and adults suffering from physical, mental or emotional disorder' (Alvin, 1975: 4).

Alley (1979) sets another definition relating to the use of music therapy in education: 'music therapy in schools is the functional use of music to accomplish specific pupil progress in an academic, social, motor, or language area. Music therapy for the special child deals with inappropriate behaviours or disabilities' (op.cit.: 118). Therapy is a notion used to refer to non-educational activity (Special Educational Needs Handbook) but in practice the terms of education and therapy are often used interchangeably as there are therapeutic aspects in music education and educational features in therapy (Ockelford and Markou, 2012).

2.3.2.2 Dance therapy and education

According to the American Dance Therapy Association (ADTA), dance/movement therapy can be defined as 'the psychotherapeutic use of movement as a process which furthers the emotional, cognitive, physical and social integration of the individual' (ADTA, 2007).

Dance movement therapy is one of the youngest of the arts therapies disciplines and it became a professional grouping in 1982 (Karkou, 2006). According to Karkou, this delay in recognition of dance therapy in the UK might be due to the fact that dance was accepted as a major art form in the 1980s and it was not until that period that dance studies were introduced in universities. In spite of this delay, Dance Movement Therapy (DMT) has developed greatly during the last few years thanks to the foundation of the ADMT UK (Association of Dance Movement Therapists), which accredits therapists and is responsible for the safe and ethical practice of DMT (Payne, 2006). The application of DMT was also accelerated by the commencement of advanced courses in universities and the American influence and support. The latter, which is strong, includes Chace, Whitehouse and Laban (Karkou and Sanderson, 2000).

Currently, the term 'dance movement psychotherapy' is the new name for the practice in the UK as used by the Association in Dance Movement Psychotherapy UK in 2009. The terms 'dance therapy', 'dance movement therapy' and 'dance movement psychotherapy' will be used interchangeably in this study to refer to the same discipline (Karkou, 2010). The field of dance movement therapy is founded on the belief that movement can be used as a psychotherapeutic tool in order to promote communication and change by integrating mind, body and spirit into the

process (Loman, 2005). Dance movement therapy has been greatly influenced by artistic trends, psychotherapy and body-mind therapies and dance education (Karkou and Sanderon, 2001).

Over the last 50 years, in the field of education, dance has been used as a powerful tool to enhance personal development and support the learning process. This is documented extensively in research by Laban (1968) and Stinson (2004).

The current study adopts an educational perspective and the intervention is designed based on a dance/music educational paradigm with the aim to be used with all students, including those with autism or disabilities and undertaken by any teacher with some basic knowledge in these areas without requiring expertise in the fields of music and dance or disabilities. The sessions of the interventions were planned taken into consideration the age groups participating in the study and not the individual differences of specific learners.

To conclude, music and dance, have been used with individuals with disabilities and those with autism, and their contribution seems to be gaining interest in practice and research. The following section looks at the role of arts in community, society and education and draw on the differences between therapy and education mainly in relation to music and dance, which is the focus of the current study.

2.3.3 Music for children with autism

Among the different therapeutic approaches for individuals with autism is music therapy, whose main focus is on addressing specific aspects of autism. Music is widely used by practitioners in therapy and education of individuals with autism,

but there is rather limited evidence to promote the use of music as an intervention to ameliorate the main characteristics of autism (Simpson and Keen, 2011).

In the UK, the pioneer British music therapist, Juliette Alvin, first reported the response of autistic individuals to music. Her work described how through intensive music therapy the autistic child can benefit in all aspects and achieve (Alvin, 1978). Alvin, used the non-verbal aspect of music as a way to communicate and engage with the child. Through a range of activities incorporating voice and musical instruments, she engaged the child into two ways interactions, by reaching the individual through sound and activating responses. Alvin's methods aimed at creating a musical experience by incorporating the different senses (visual, auditory, tactile) as well as exploring body and space awareness.

Since then, numerous studies have been undertaken and published regarding interventions with music specifically designed to address the communication, emotional and cognitive impairments present in autism (Thaut, 1984; Brown, 1994; Pavlicevic, 1997) as well as more recent ones, mentioned later in the chapter (Carnahan et al., 2009a; Simpson and Keen, 2011). The majority of studies were based on case studies and often in single cases, and in many cases the research design is not clearly described (Dempsey and Foreman, 2001).

In their review, which included published research studies relating on Music Therapy for individuals with autism, Accordino et al. (2006) underline the need for scientific evaluation of music therapy intervention studies that include other than case studies, anecdotal reports and small studies. In their review they excluded studies that used music education techniques. They presented an account of 20

articles from 1973–2000 among which less than half were experimental designs and argued that although there is a range of studies reporting the benefits of music therapy on the different impairments of individuals with autism, there are numerous weaknesses in the research. Among these weaknesses the authors report lack of statistical analyses, single case study models, non-comparative designs to compare effects of music therapy to other forms of therapy. The studies were divided according to the area of focus for pupils with autism and the ones, which are relevant to the current project, will be discussed further in the following sections. The need to undertake rigorous research and reliable measures to assess the effectiveness of music therapy is also highlighted by Dempsey and Foreman in the review of educational approaches for pupils with autism (2001).

A great deal of previous research projects conducted in music therapy, rely on case studies noting changes in a single participant (Kern et. al, 2007; Finnigan and Starr, 2010). Music therapy practitioners generally claim that case study seems the most appropriate research method since the therapeutic programmes followed are individually designed for each client and the same treatment cannot be offered to more participants in the same study (Accordino et al., 2006). On the other hand, the authors noted that only a small number of reports includes statistical analysis and suggest that future research should look at more valid measures and analysis. They also underline that research so far compares the outcomes of music therapy to the absence of therapy and stress the need for more comparative studies in order to compare music with other forms of therapies used for individuals on the autistic spectrum.

Whipple (2004) reviewed nine studies that compared music to non-music interventions for children and young people with autism and found that music can

be beneficial irrespective of the age of the participants, the design of intervention or the methodology in the following areas: social behaviours, attention to task, communication and engagement with others, body awareness and coordination, symbolic play and anxiety reduction. Nonetheless, Whipple's analysis was based mainly, with the exception of three, on unpublished studies.

More recently, James et al. (2015) reviewed 12 studies using music therapy for children with autism, most of which reported positive outcomes, mainly in relation to verbal communication and social interaction. Studies included in the reviews mentioned and relevant to this research will be further explored in the following section. The authors concluded that music therapy can be a promising approach for specific individuals with autism and specific purposes, but further research is needed to consolidate findings and compare music to different therapies.

2.3.4 Music and socialisation

This section presents the studies that have been undertaken with individuals with autism using music to address the difficulties faced by the pupils in the area of social interaction. Social communication and interaction is the main topic of the current study and prerequisite for effective inclusion.

> Music sessions offer a unique and secure framework through which many of the skills and disciplines of social interaction can be experienced and developed. Whatever its context and content, music is particularly effective in supporting the development of early social interaction. It is, in every sense, highly repetitive ... Hence, it provides a secure framework for the risky business of reaching out into the far from predictable world of other people, setting parameters and establishing the boundaries within which socialization can occur, and building confidence through a medium which the great majority of young children find enjoyable and motivating. Ockelford (2008: 40)

There are several studies, which evaluated the use of music as an approach towards developing specific social skills of children with autism (Simpson and Keen,

2011). The majority of studies examined social engagement as an outcome of music session.

In particular, Kern and Aldridge (2006) explored the effects of non-directed music activities and teacher and peer music intervention during outdoor play session. The study involved case studies of 4 boys with autism aged between 3 and 5 attending a community-based childcare program. The aim of the intervention was to encourage the children with autism to take part in outdoor play activities and interact with their peers, thus enhancing their social skills. A 'music hut' was set up in the playground area where educational and therapeutic activities took place. The research compared four different conditions – baseline, adaptation of the playground, teacher mediated intervention and peer-mediated intervention – all repeated for each of the four participants. They found that although the music hut in itself did not enhance social communication, this combined with teacher and peer-mediated interventions improved positive peer interactions and play.

Similarly, Kim et al. (2008) conducted a research programme in which they compared music therapy to play sessions in relation to joint attention and emotional communication and resulted that the music condition was significantly more effective in initiating joint attention and turn-taking.

There is also some research using music regarding specific social behaviours, which are targeted with the use of social stories. Brownell (2002) explored the difference between traditionally spoken social stories and musically adapted social stories to reduce unwanted behaviour in four children with autism aged between 6 and 9. The social stories were written following Gray's (2010) suggestions and original music and lyrics, influenced by the stories, were composed. Using a

multiple treatment design, Brownell found that the frequency of problem behaviour was reduced during the music condition in all four children but significant difference was notable only for one participant. Similarly, Pasiali (2004) used social stories with familiar melodies to investigate the use of music therapy in enhancing the acquisition of social skills in three children with autism aged between 7 and 9 years. The researcher found that problem behaviours were reduced as result of the music therapy intervention but, similar to Brownell (2002), significant difference was seen in only one individual.

There are also a few research projects (case studies) that examined how music therapy can be used to promote social participation, interaction, and eye contact between a child with autism and an adult. These studies reported an increase in initiations of interaction and eye contact (see for example Wimpory et. al, 1995; Starr and Zenker, 1998; Wimpory and Nash, 1999).

Finnigan and Starr (2010) undertook a case study exploring the effect of music therapy on the social responsiveness and avoidant behaviours of a preschool child with autism. The hypothesis was that the child would demonstrate more socially responsive behaviours and fewer avoidance behaviours during the music therapy intervention than during the non-music intervention in which the same tasks were performed without music. Toys were used combined with spoken scripts in the non-music condition and with familiar melodies in the music condition. Different behaviours of interaction and aversion were assessed during both conditions. Finnigan and Starr found that eye contact, imitation and turn-taking were more frequently observed during the music intervention and therefore suggested that the use of melodies and songs can be an effective strategy for enhancing social responsiveness in young children with autism.

Furthermore, in their study, which has similarities with the current research project embedding story and literacy, Carnahan et al. (2009a, b), examined the effect of music within a group setting on levels of active engagement during an interactive book session. They measured attending behaviour during three conditions: read only; interactive story using two and three-dimensional materials; and music added with text sung. The results from the children's observations showed that engagement was improved when interactive books were used in conjunction with music.

The studies mentioned in this section were in the majority undertaken as therapy sessions involving solely music without incorporating movement or in comparison with movement dance or other therapies/disciples. Therefore, the use of dance for children with autism is explored separately below.

2.3.5 Dance for children with autism

Dance has been used both in therapy and education as a method to enhance personal development, to facilitate the learning process and to promote achievement. It has been used in the school environment with children with special needs, including those with autism as a tool to support body awareness, communication, self-esteem and promote socialisation (Tortora, 2010). Unfortunately, there is little evidenced-based research on the effectiveness of using dance movement therapy as an intervention for individuals with autism (Martin, 2014).

It is often claimed that in order to dance, someone should be talented and possess different skills such as musicality, body elasticity and unique expression. Therein lies the difference between dance as an elevated art form and dance as expression

through movement. Movement is one of the most natural and direct means of improvisation, expression and communication and, as Erfer (1995) suggests, everyone can move or dance in some way, including individuals with ASC. She maintains that in particular for children with autism, who often have difficulties in developing their speech, dance can be for them their 'language' enabling them to develop a non-verbal contact and communication with others. Similarly, Goodgame (2007) reports that 'therapeutic dance' has the power to enhance the self-esteem and creativity of pupils with behavioural problems. She reports that during movement sessions and activities individuals 'explore their own thoughts and feelings beyond the barriers of words' (Goodgame, 2007: 79). Loman (2005) adds that dance therapy is especially beneficial for children who cannot communicate through words since it is an intervention at a non-verbal level. Body language is inherent in virtually everyone and using this as a base, the dance therapist can work at this level to build trust, confidence and non-verbal relationships. Moreover, in group work, children with autism have the opportunity to relax free from any stressful parameters to develop social and cooperative skills. Besides this, movement 'expresses the individual's story, dissociated or harnessed emotions, potential imageries and fantasies interwoven in them' (Partelli, 1995: 243).

Some children with autism have difficulties in controlling their movement, which can be characterised by rigidity and repetitive patterns. Dance therefore can help them enrich their body vocabulary and acquire more control: 'dance has been shown to be calming and has helped children with motor coordination difficulties, emotional issues and more' (Richman, 2001: 19).

As a result, dance therapy is a holistic approach and kind of treatment since it gives children a 'sense of wholeness' by connecting body, mind and emotions (Sherborne, 1990: 23). Overall, dance therapy focuses on improving self-expression, raising self-esteem and awareness of their bodies, creating healthy and solid relationships and improving social and communication skills. Dance therapy can be an especially effective way to help children with ASC. Individuals with autism very often have difficulties in communicating with others and this can impact on all aspects of their lives. As Tortora explains

> non-verbal expressive methods are an especially effective way to support both social and emotional relationships for children with autism. So much of their behaviour, which may initially appear to be idiosyncratic and dysfunctional, can transform into creative expression when viewed as a form of communication. (Tortora, 2006: 110)

Hartshorn et al. (2001) examined the benefits of dance movement therapy for young children with autism. They implemented 30-minute movement sessions twice per week for 2 months for 38 children with ASC (mean age = 5 years). Sessions consisted of different activities using props such as movements with hoops, an obstacle course and moving to the beat of a tambourine. The authors focused on certain issues such as stereotypical behaviours, wandering, resisting the teacher etc. in the first and last session, by recording the percentage of time each behaviour occurred within six randomly distributed 1-minute periods. Results showed a significant increase in attentive behaviours and decrease in anxiety behaviours. On-task passive behaviour was also found to increase. Hartshorn et al. (2001) stated that, at the end of the programme, participants were still lacking full engagement on task; they nevertheless reported a significant improvement in the levels of engagement considering children had been previously observed wandering and/or resisting the instructor.

Overall, dance therapy can provide to children with ASC the necessary 'elements for healthy development' (Bernstein, 1981: 3). Indeed, the exercises used by the therapist during the dance session usually combine all sorts of activities and are designed for the whole body, with the aim of activating all the senses. Importantly, Leventhal (cited in Erfer, 1995: 197), supports the idea that dance therapy for the 'special' child 'deals fundamentally with sensory motor and perceptual motor development and integration'. Erfer explains that this integration 'involves interaction of the various channels of perception visual, auditory, tactile and kinaesthetic with motor activity' (Erfer, 1995, 197). Many practitioners in the field of DMT (see Erfer, 1995; Tortora, 2006; Devereaux, 2012) have worked with individuals with autism for many years and have been providing ideas and approaches. Nevertheless, there is a need for further evidence-based research to determine some clearer impacts of dance therapy as an early intervention for children with autism (Martin, 2014).

2.4 Conclusions from the literature

Chapter two has presented the key theories, debates and studies relevant to the project, involving inclusive education, the autism spectrum, and music and dance. In particular, the literature highlighted that inclusion of children with autism in mainstream education is currently a contentious issue, mainly in relation to the wider debate around inclusive education and disability, and specifically concerning the nature of difficulties associated with autism itself. Research suggests that pupils with autism, who are increasingly attending mainstream settings, are more likely to be rejected by their peers in comparison to their neurotypical peers.

Therefore, focusing on peer acceptance and belonging are central in the current intervention programme.

Likewise, autism remains contentious and there is a plethora of therapies and approaches for individuals on the autism spectrum. Among those, music and dance can be beneficial for children with autism, mainly with respect to their inclusion in their group of peers in mainstream classes. Research has been undertaken looking at the positive impact of music and dance for pupils with autism and suggests generally positive outcomes. These outcomes are mainly associated with specific social and communication skills such as eye contact, initiation, participation and verbal production.

However, a lot or work documented in this field is observational and involves single case designs. There seems to be a lack of evidence-based research in the area of music and dance for pupils with autism. Furthermore, the majority of studies were undertaken within the framework of therapy, including one-to-one therapeutic process or done in a small group in specialised settings. Finally, few studies compare music or dance to an alternative approach. The systematic review of the literature therefore highlights the need for future research of a more rigorous nature.

The current study aims to contribute to the literature by examining the benefits of music, dance or a combination of both for pupils with autism attending mainstream settings. As will become evident, the study has a unique, ecologically valid design based on a story, and undertaken within a philosophical framework of inclusive education. The analysis focuses on engagement on task and physical proximity with peers as proxy measures for inclusion.

The following chapter explores the methodology that informed the research tools and collection of data in order to evaluate the role of music and dance in the inclusion of young pupils with autism.

Chapter 3 Methodology

3.1 Introduction

The aim of this chapter is to discuss the rationale behind the methodological approaches selected and to present in detail the methods chosen, the process of collection and analyses of data as well as the different measures used. Firstly, I state the objectives and research questions of the study and then describe in detail the specific design as well as the justifications for following this approach and selecting the measures. Then, I present an outline of the field of educational research in the UK and the prominent debates involved. This is followed by a description of the methodology of mixed methods design and tools used in this study. The chapter concludes by addressing the issues of reliability and validity as well as raising the ethical considerations involved. Limitations of the design are also outlined.

This study is an empirical inquiry exploring the inclusion of pupils with ASC in mainstream schools, and how music and dance can promote participation in the group and interactions between peers. The study follows a mixed methods approach using various sources of evidence such as an intervention programme, structured observation of the sessions and quantitative analyses of scores. Observation profiles, teachers' feedback, and other qualitative data, presented in section 3.4, such as the 'monkey task' and repetition of data, are also included. Two detailed case studies provided further insights and complemented the quantitative analyses. The study has a unique design, in terms of the story and music and dance tasks that were designed specifically for this study as well as the measures used to assess inclusion. The intervention programme can be followed,

and in the future replicated, by any teacher without specialism in autism, music or dance. The present study also makes a significant contribution to research in this field. It adds to the existing literature on the benefits of music and dance for pupils with autism and explores different ways of evaluating peer awareness and inclusion. There is little published data on the effectiveness of music and dance combined for children with autism in inclusive settings and the majority of studies so far have been undertaken in the field of therapy and focusing mostly on case studies (Accordino et al. 2007).

3.2 Aims and research questions

The aim of the research is to explore the impact of music and dance on the social inclusion of primary-aged children on the autism spectrum. In particular, it seeks to discover how pupils across the spectrum can benefit from music and dance/movement sessions in terms of their interaction with their peers and their socialisation, thus enhancing their effective inclusion. It is recognised that measuring the degree of social inclusion over a period of time is challenging (Watkins et al., 2015), and the research initially focuses on particular elements of inclusion – spatial proximity and participation in task – as proxy measures of successful inclusion in the educational process.

The research question is:

To what extent are

a) engagement and

b) inclusion

among children (5–7 years old) with autism spectrum condition educated in mainstream schools enhanced by

a) music

b) dance or

c) a combination of both?

3.3. Rationale and methodology

This study investigates the effectiveness of a music and dance based programme for autistic pupils, attending mainstream settings, and their neurotypical peers. The intervention was designed taking into consideration the different needs and abilities of children as well as the age group selected. The range of data collection tools and methods of analysis similarly reflects this diversity. The reasoning for adopting a range of methodologies in special education is that it is a complex field and factors such as the variability of the participants makes it one of the hardest-to do science (Odom et al., 2005). In order to fully grasp the complexity of the field and the different tensions that arise and affect research, it seems necessary to unfold the current conceptualisation of educational research.

This section gives an overview of the field of special education research and sets the scene and rationale for the specific methodology and methods chosen in this study.

3.3.1 Educational research

Parallel to the debates and tensions around inclusive education and disability explored in chapter two, the field of research in special education is similarly affected. As the following section describes, different models of disability go in

line with separate methodologies. These debates influence the choice of methods and approaches used in this study, which is undertaken under a framework of inclusive education.

Positivism was widely used in special education and referring to research relevant to the current study, when the medical model of disability was dominant it was strictly associated with positivist approaches (Clough, 1999). The field of learning difficulties and special needs education reflected the influence of psychology and psychiatry through the dominance of positivist designs (Porter and Lacey, 2005) Positivists support the idea that the methods used in natural science can be applied appropriately for the enquiry of social phenomena since 'human behaviour is governed by law-like regularities' (Ritchie and Lewis, 2003: 23). This approach can see 'subjects' as 'objects' and 'difficulties' as 'deficits' (Clough, 1999). The consequence of those researches was that students were identified by their disorder and 'failure', which could be assessed clinically and described in medical terms (Clough, 1999), and ignored the effective impact on individuals with disabilities, their families, or on whole settings of education, residence or work for disabled people.

This study, as explored later in the chapter, takes into account the individual strengths and difficulties of autistic pupils in the design of the music and dance programme and in the collection and analysis of the data. It is undertaken within a philosophical framework of inclusive education which influences all stages of the research.

3.3.1.1 Philosophical vs. empirical research

Philosophy guides research throughout all areas of the process and can be traced in the language and discourse used, the methods selected and the various interpretations. Philosophy according to Hammersley (2006) can be valuable and contribute significantly to social sciences in two areas: methodology and values. In particular, philosophy defines the goals and means of research and in addition 'concerns the values that frame social science inquiries so as to make them relevant to human concerns' (Hammersley, 2006: 273). It is certain that philosophy is valuable in order to define the value principles around which researchers design the intellectual framework of their project and clarify the research questions.

Hammersley (2006) argues that while philosophy plays an essential role in social and educational inquiry, there are important limits to its contribution. There is a debate around the philosophical versus empirical research, with each approach having advantages as well as disadvantages.

According to Standish (2007), in recent decades institutionalised educational research seems to have been dominated by the assumption that research must be 'empirical in character'; when referring to educational institutions such as schools, the aim of the research is to find ways for them to more effective or to be improved; there is often the belief that educational research should model itself on medical research by using randomised control trial as the ideal research method (Standish, 2007).

It is certain that there are supporters as well as opponents of the philosophical as well as of the empirical approaches in educational research. As a result, and with the aim to 'dissolve the empirical/philosophical divide', there seems to be a need

for a different approach which will have the ability to ‘transcend distinctions such as theory/practice, a priori/a posteriori, and the individual and the intersubjective’ The writers go on to argue that ‘without such a framework, talking about rapprochement between philosophical and empirical research is merely rhetorical’ (Smeyers and Verhesschen, 2001: 74).On the other hand, Phillips (2005) argues that according to official government boards the contested nature of empirical research should be the focus of educational research. Nevertheless, irrespective of the divide between philosophical and empirical research or the combined use of both, there seems to be an emphasis on evidence based research which can impact policy and practice in education.

When researching special needs education, a main aim may be to design policies, which will facilitate the education and inclusion of all students, and also to implement teaching strategies and interventions. It seems essential, firstly to build a philosophical framework around special education and inclusion, which will act as a guide for the design of strategies and methods. It is important to set theoretical perspectives and distinct aims that need to be satisfied. In order to achieve this, a philosophical and critical study of perspectives and policies is needed. On the other hand, in order to evaluate the effectiveness of a particular intervention designed to satisfy and improve certain aimed aspects, it is necessary to undertake empirical research. Therefore, both approaches, philosophical and empirical are equally valuable each one serving different purposes.

To conclude, the philosophical and empirical approaches both play an important role in educational research, each one serving different purposes. It seems necessary though in this social and political climate to encourage good quality policy-based and practice-based research. In order to achieve this, Whitty (2006)

argues for a diversity of research approaches and purposes in educational research 'partly because we cannot know which will ultimately influence policy' (op.cit: 175).

3.3.1.2 Evidence based research and its impact on policy

'Evidence-based' refers to an approach, which argues that policy and practice should be capable of being justified in terms of sound evidence about their likely effects (Coe, 1999). As Davies (1999) explains, this shift was due to 'the criticisms about the gap between teaching and research community, the non-cumulative nature of good educational research and its effective dissemination' (op.cit: 109).

Research in education in the UK has been subject to 'substantial government intervention in recent years; the rationale for this has been the demands made by a model of evidence based policymaking and practice that carries implications for other fields of social research as well' (Hammersley, 2005: 317). The aim of this evidence based model of research is to provide valid and reliable findings which can be replicated and also can be applied in policy-making and therefore in practice.

Validity and reliability are major issues in the research agendas and the contribution and high quality standards of a research project can by influenced by various aspects. According to Westbrook (2002), the main factors involved are the following: area of research, research design, diversity of sample, data collection and analysis methods and statement of implications of the findings. The author adds that the National Research Council (2002) sets certain principles which allow one to distinguish scientifically based research from other types of research. Among others Westbrook mentions that a scientifically based research should be:

‘driven by significant questions, empirical in nature, theory based, capable of being replicated producing similar results and available for professional scrutiny’ (NRC, 2002: 3)

Apart from ‘what counts’ and ‘what values’ in research, government and policy communities place emphasis on ‘what works’ in education. The focus on evaluating ‘what works’ and does not ‘work’ in education might imply that ‘the ideal form of educational research is the randomized controlled trial, as in medical research’ (Oakley, 2000 cited in Hammersley, 2005). Moreover, as Hammersley (2005) maintains, the emphasis on ‘what works’ ‘is associated with a widespread and influential view about the socio-political function of both research and education: that one of their major roles, if not the primary one, is to facilitate national economic growth’ (op.cit: 319). This focus on accountability in research is in line with the standards agenda and accountability of education, which affects inclusive policies and practices, as explored in chapter two. The purpose of this study is to explore the potential capacity of music and dance in terms of socialisation, motivation and inclusion of pupils with autism. Although the focus in this project is not on academic achievement and around core curriculum subjects, which seems to be the emphasis of the standards agenda, the aim is to promote interventions and approaches beneficial for teachers working with children with autism, which could be implemented into the general curriculum.

Whitty (2006) underlines that research which is focused on helping teachers to improve their practice ‘needs to be more diverse in its nature than the rhetoric of ‘what works’ sometimes seems to imply’ (op.cit: 162). The writer goes on to argue that when research is narrowly defined and constrained ‘it would actually be very limited as an evidence base for a teaching profession that is facing the huge

challenges of a rapidly changing world, where what works today may not work tomorrow' (Whitty, 2006: 162). He suggests therefore undertaking studies with different research questions regarding why something works and also why it works in some contexts and not in others. In addition, Whitty (2006) encourages researchers to find ways to influence policy by responding to criticisms, align with the government's agenda however not at the expense of their values. In particular, he maintains that

> Research can influence policy and practice in different ways—often indirectly and sometimes in ways that were not intended. Rather than seeing impact as only likely to arise from research conceived in the engineering mode, we should welcome the sometimes serendipitous nature of the relationship between research and policy. (Whitty, 2006: 171)

On the other hand, Hammersley (2005) argues that 'policy or practice cannot be *based on* research, in any exclusive sense, and that to try to make it research-based will distort either research or practice, or both' (op.cit: 321). Among the negative consequences he mentions a reduction in funding of research unrelated to prioritised policy issues and a rise in the possibility of bias. This could explain the paucity of evidence based research studies evaluating the impact of music and dance in inclusive education for pupils with autism.

It is evident that there is a strong debate around the issues of policy, practice and research but also around what is meant by valuable and good research that affects current research studies in special and inclusive education. There are also different levels at which evidence-based policy and practice in education can be examined and appraised. Educational policies in order to be implemented need sufficient evidence. As mentioned above, there are different understandings of the notion of 'evidence' and different interpretations according to a specific field in which

research in undertaken. In addition, as Pring (2005) maintains, the political context should be taken into consideration since it 'invades not only the policies and practices themselves, but also the different philosophical advocacies of different sorts of research' (op.cit: 207). Pring (2005) goes on to argue that research 'is a systematic search for evidence in order to answer certain questions; however rarely is such a search a straightforward empirical matter; the important questions are usually if not always controversial not only politically and morally but also conceptually' (op.cit: 262).

The above section looked briefly at the main paradigms in educational research and how philosophy and empiricism can affect policy and practice. It is clear that there is a pressing focus on accountability and 'what works' in education. Similar trends apply in special and inclusive education, which is the main area of focus of the current study. There seem to be a range of frameworks and ideologies impacting on research and on the other hand the focus on performativity in research and practice comes into the debates surrounding special and inclusive education, analysed in the previous chapter.

3.3.2 Methodology

In this project the philosophical framework of inclusion made a considerable impact on the methodological approach that I undertook. The different perspectives and ideologies around social realities have a considerable impact on the researcher's thinking and approach. In other words, each researcher has her own ontological position and view of the world, which can have implications for her study (Mason, 2002).

Moving away from a psychological-medical or therapeutic model, I applied an educational approach as will be discussed. The methods used reflect these views

by selecting non-standardised tests and measures in order to evaluate socialisation, peer interaction and inclusion. The educational perspective also affects the language used throughout the intervention and project in relation to content of story, data collection and analysis.

Therefore, a mixed method approach in the gathering and analysis of the data was deemed the most appropriate method in order to determine in detail whether and how the specific intervention could influence the social inclusion of children with ASC. It was also necessary to combine different methods in order to deal with the complexities that such an assessment or evaluation of outcomes entails. Mixed method approaches can be defined as studies during which the researcher after collecting and analysing the data, merges the findings, and finally interprets these by using qualitative and quantitative methods in a particular research project (Tashakkori and Creswell, 2007).

It is argued that, by using mixed method designs and therefore a range of approaches, within a single project of inquiry, we are able to expand its scope. Using a number of methods also allows us to gain a better understanding of human behaviour and experience (Morse, 2003). Similarly, Ivankova et. al., (2006) argue that the rationale for using mixed methods design is based on the fact that both quantitative or qualitative procedures are insufficient to depict in detail a situation when used autonomously in a study. On the other hand, by combining or complementing each other they can provide a rigorous study. Bryman (2006) identified 16 rationales for combining qualitative and quantitative methods drawing from a content analysis of articles on studies using mixed methods approaches between 1994 and 2003. Below are some that apply to this specific research using a mixed methods design.

i. *Offset:* by combining quantitative and qualitative methods the researcher can offset the weaknesses of the methods used and take advantage of their strengths. The first stage of data analysis in the current project involved measuring the outcomes of music and dance on the inclusion of children with ASC through structured observation of the intervention sessions. This allowed for a precise and reliable measurement and a statistical analysis of the data. Nevertheless, often quantitative analysis fails to interpret the complex features of human nature, behaviour and relationships. Qualitative analysis through two detailed case studies helps to 'add flesh and blood' to the analysis (Burns, 2000).

ii. *Completeness:* mixed methods can provide a more comprehensive account of the area of enquiry. Qualitative analysis in the current project further illuminates the benefits of music and dance for pupils with autism and gives a more complete overview of how inclusion is promoted through the practice of music and movement.

iii. *Explanation:* when one of the methods is employed to explain the findings generated by the other. In this research, the case studies as well as all other qualitative data aim to explain the statistical findings and present a more holistic account of the inquiry.

iv. *Illustration:* when qualitative data are used to illustrate quantitative results. The detailed case studies illustrate how music and dance can enhance engagement on task and inclusion mainly in comparison to story based tasks.

v. *Credibility:* integrity of findings is promoted by using mixed approaches. Combining different methods in data collection and analysis, not only complement and enrich the findings but also strengthen the results from the different measures.

vi. *Triangulation:* when quantitative and qualitative data are combined to triangulate findings in order to be mutually corroborated. In this study, findings from the statistical analysis of the structured observations, the case studies, observation checklists and repetition of task, are triangulated to provide an insight of how and why music and dance can be an effective approach for autistic pupils.

Tashakkori and Teddlie (2003) identify about 40 different mixed methods designs that have so far been reported in the literature. Creswell et al. (2003) distinguished 6 mixed methods designs that were most commonly used in research: 3 concurrent and 3 sequential designs.

The current research study design falls into the explanatory sequential design, one of the most popular in social research, which entails the collection and analysis of quantitative data followed by qualitative data in two consecutive stages within one study (Creswell et al., 2003). The collection and analysis of quantitative data is prioritised during a first stage of the study which is followed by the qualitative phase which aims at illuminating the quantitative results in more depth (Creswell and Plano Clark, 2011). In the current study, structured observation of the videos taken during the intervention sessions shapes the first phase of the analysis. During this stage, two variables are measured (on/off task and inclusion) and analysed in relation to task (music, dance, music and dance and other) and to whether students are on the autistic spectrum. The use of video is at the core of the current study but

used in conjunction with a number of other quantitative or qualitative research methods can produce rigorous results.

Creswell and Plano Clark (2011) suggest that the researcher should decide which quantitative results need to be further elaborated and define the criteria that underpin the selection of participants. Due to time constraints I decided to include some qualitative data for all groups (observation profiles, monkey task, repetition of task) but to focus on two case studies. The two case studies provide a detailed analysis of two groups and individual autistic children and further explored the findings of the statistical analysis. The two groups selected, who were also the first to receive the programme, represent a varied sample of the participants as they consist of a boy and girl, who are on different position on the autistic spectrum.

3.4 Design

In order to explore how music and dance can promote the socialisation of students with ASC an intervention was designed and carried out in primary mainstream settings. Due to time constraints, seven groups of 5–7 years old students were included in the study. The age group was selected because early years education can have a major impact on children's future life. In particular, early intervention for children with autism is endorsed by extensive research (Narzisi et al., 2013; Dawson et al., 2010; IDP, 2010; Dempsey and Foreman, 2001; National Research Council, 2001).

The seven participating groups each comprised six children, a mixture of boys and girls, and included one child on the autism spectrum, selected to participate by the school's Special Educational Needs Coordinator. The intervention consisted of a story, narrated to the students, and music, dance or combined music and dance

activities in relation to the plot. Six sessions per group were recorded on video to allow comparison of the different variables and measures. Two case studies were analysed in depth to give a more detailed picture of the findings. In addition, the teachers, who also provided feedback, completed observational profiles at the beginning and end of the programme. Other qualitative data ('monkey task', repetition of task) were also used to evaluate the benefits of the music and dance intervention in relation to the pupils' self-esteem and peer acceptance as well as their ability to remember and perform the tasks taught.

3.4.1 Intervention

Forty-two primary aged children in total, in seven groups, took part in the intervention, among which 7 being autistic, one in each group. The intervention consisted of six sessions lasting approximately 30 minutes each. This time frame was appropriate taking into consideration the content of the intervention and the age of the children. Although the aim was to keep the programme as similar as possible in each group there were variations in terms of duration of the whole sessions or parts of them according to the group, the time of the day and other factors such as concentration span of students, high or low arousal level. For instance, in several occasions, the intervention session did not start on time. Also, pupils were tired if the programme was scheduled for the end of the day. In other occasions, technical or location issues, such as availability of equipment and suitability of space, had impact on timings and changes in the program (e.g. space was too small, CD player was not working). Specific factors will be discussed in the detailed analysis of the cases studies in chapters 6 and 7. During the six-week intervention programme, four different variables were incorporated namely – i) music, ii) dance, iii) music and dance, and iv) other, neither music or dance (story

by itself). This allowed comparison of music/dance and language based tasks and activities.

3.4.2 The story

The intervention programme consisted of a story (see Appendix 6) enhanced by dance and music activities that related to its content. Story and storytelling have been used in the form of drama and play in education (Karkou, 2010) and are often the core of dance therapy sessions for children and adults (Tortora, 2006). Listening to stories is part of the National Curriculum statutory English program of study. Therefore, I initially undertook research on children's books in order to find a suitable story to the age group for narration. In particular, I looked at the recommended English National Curriculum book list for Level 1 (for young readers in reception and Year 1) and for Level 2 (appropriate for the average 7-year-old; expected level for Year 2 and Year 3). The list consisted of 53 story books. However, it seemed more beneficial to choose a story unknown to the children; in order to avoid the possibility that some could know the story and be in a more privileged position and also to keep the enthusiasm high about what will happen next and be more motivated. I wrote a story in Greek, which was then adapted by a professional Greek storyteller with experience in working with toddlers, young children and children with additional needs. I then translated it into English with the help of a native speaker. The following questions helped in constructing the plot: Who are the main characters? What is their task? What are the obstacles they encounter? What helps them overcome these obstacles? How is the goal reached? What are the main messages to put across?

The plot narrates the story of Leo, the lion, king of the jungle who one day finds a golden chest, with a note on it and a map, asking him to follow the map in order to

find the key to open the treasure chest. Leo asks his animal friends for help and he takes along to his adventure the monkey, the penguin, the giraffe, the mouse and the bear. They start their journey by travelling to an island where they need to cross a huge lake in order to arrive to the Tiger's palace, who will open the gate only if they perform a dance for him. In the next episodes, they traverse the haunted forest, arrive in the field of poisonous food and finally find the fairy's flower house where they find the key to open the chest. They are asked to solve a riddle at the end of the study, which holds the main moral message of the story. The adventures that they need to pass in every episode teach them the importance of courage, co-operation and friendship. The 'monkey task', explained in section 3.6.2 is strongly linked to the plot of the story and inspired by the first and last episodes.

Although the main episodes of the story were kept the same, a few phrases as well as the pace of story were not identical in all groups. The story was divided into six episodes as were the sessions of the intervention programme. Each session included a few props (map, masks, stuffed toys, musical instruments, and play tunnel) to increase the level of enjoyment and identification with the story. The main values emerging throughout the story were cooperation and friendship and the activities required physical proximity, contact and concentration. (Appendix 6, the whole story.)

3.4.3 Music and dance activities

During the sessions, music, dance or a combination of music and dance activities were designed to complement the story. Every episode contained an 'adventure task' that the group had to achieve in order to proceed to the next one. Those tasks

involved the participation of all students and required to cooperate in partners or groups. Dance and/or music activities were at times also performed at the beginning or end of the sessions as introduction or ending. The dance tasks were either predetermined sequences taught to the participants, games with movement or exercises that provided the opportunities for free expression. When creating the tasks, basic principles of movement (light, strong, fast, slow) were taken into consideration, to allow a variety and combination of time and force elements. Music was used either to complement the movement activity or introduced by itself. The music tasks involved listening to music, playing musical instrument (rainmaker) and little singing. The songs that accompanied the sessions were selected to match the theme of the different adventures (water sound for lake adventure, African drums for African dance) and in the other cases were taken from movies familiar to the children (Lion King-Toy Story- Dora the Explorer, see Appendix 7, outline of sessions)

3.5 Participants

Table 3.1 Participants in the study

N	Groups	ASC Gender	ASC Verbal	Number of Boys	Number of Girls	Age
1	B	Boy	Verbal	3	3	5-6
2	SG	Girl	Non-verbal	2	4	7-8
3	H	Boy	Verbal	4	2	5-6
4	MJ	Boy	Non-verbal	3	3	6-7
5	MR	Boy	Verbal	4	2	6-7
6	MH	Boy	Verbal	3	3	4-5
7	O	Girl	Verbal	2	4	4-5
N Total/ M age	**7**	**G=2, B=5**	**V=5, NV=2**	**21**	**21**	**5.8**

Notes N= 7, number of groups and initial of their names. The bottom row represents the total number of groups, of pupils within each category listed in the columns: total number of verbal children, of boys/girls and mean age of participants

Table 3.1 provides some general information on the participants of the study. Each row represents a group and states the number of boys and girls, the approximate

age of the pupils, the gender of the child with autism and whether s/he was verbal or non-verbal. The last row shows the total numbers for all of the participants.

A total of 42 children, six in each of the seven groups participated in the study. All children, aged 5–8 years old, were recruited from five primary schools in London. Schools were randomly selected, with the exception of one. In total, 130 emails were sent to primary schools in London and four agreed to participate in the study, either with one or two groups. The children with autism were chosen by the head teacher and Special Educational Needs Coordinator (SENCO) and their classmates were mainly selected by the class teacher. Each group contained boys and girls and one child on the autism spectrum. There were twenty-one girls and twenty-one boys in total, among which two girls and five boys on the autism spectrum. One boy and one girl, two in total, were non-verbal.

3.6 Procedures

The selected participants (N=42), among whom seven were on the autism spectrum and attending primary schools in London, participated in the six-week intervention programme which consisted of a story and music and dance activities. The sessions were video recorded and this material provided the main body of comparison and analysis mainly focusing on the degree of participation on the task and that of spatial proximity (inclusion in the group). In addition, I analysed both the ‘repetition of task’ and ‘monkey task’, which will both be fully explained below, with the help of the video recorded sessions for all participant groups. Systematic observation and statistical analysis were used for all groups and were complemented by unstructured observation for the two detailed case studies. The main advantage of using video recording is that it allows the researcher to analyse

behaviour any time after the event at any pace and to repeat viewing if necessary (Coolican, 2004). Finally, the teachers completed an observation profile of the pupils on the spectrum before and after the intervention programme and also provided some verbal or written feedback with regard to the programme, based on the comments of the participants and observed behaviours throughout the six weeks of the intervention.

3.6.1 Repetition of task

In every session the children had to pass an adventure-task in order to go to the next step towards the treasure (see Appendices 6 and 7). This task involved a music, dance or music and dance activity explained to them by the researcher. This task was also repeated at the beginning of the next session to assess whether the students could remember and perform the task independently without the input of the facilitator. When some adult support or prompting was given to the pupils, it was recorded whether this was in the nature of a verbal prompt, an object- prop used to complement the story, the music used in the adventure task or any other prompt. It was hypothesised that music, when used as a prompt, could help pupils remember the task. This could provide some valuable insights into how music may enhance memory by linking to certain tasks as well as its capacity to engage learners and make activities more motivating.

On several occasions, mainly due to lack of time repetition of task had to be omitted from the session, especially in the second session (for more details see results in chapters 4 and 5).

3.6.2 Monkey task

At the beginning of the intervention programme, during the first session, the children chose the characters they wanted to be throughout the story. Out of the six animals, more detailed description was given for two characters; the lion that is the protagonist and strong character, leader of group and the monkey who is presented as the one who is shy, lonely and does not have many friends. The children chose the character they wanted to be individually or decided in a group in case of disagreement. Throughout the adventure and towards the end the monkey appears to be a great helper and the animals regret not being friends with the monkey before. They were then asked what animal they would choose if they could repeat the programme from the start. The idea behind the monkey task was to provide some evidence around how the peers view the children with autism and if they feel excluded from their peers. The monkey task was repeated at the end of the programme to see whether working together during these sessions would increase the confidence of pupils with autism and positively influence their peers' views.

3.7 Ethical Issues

Given that the research was undertaken in schools and involved the participation of young children and teachers, ethical considerations were addressed throughout all stages of the study. Firstly, the study was approved by RU Ethics Committee and was carried out in accordance with the University's Ethics Guidelines.

Then, several other issues regarding the methodology should be considered when researching inclusive education (Farrell, 2000). Farrell argues that difficulties may arise from using matched control group designs in research projects for ethical reasons. In the current study, all pupils took part in the same intervention programme and all variables were designed to be fun and educational for all pupils.

Certain ethical issues arise especially when the research involves young children and specifically pupils with autism spectrum disorder who might have difficulties in language and communication. More specifically, participants might have difficulties in understanding the aims and process of research and also in communicating clearly their feelings and needs. I have ensured that the children have understood that they can refuse to participate at any stage of the process. I used simplified, clear language and visual support at the level of understanding of the pupils to explain that they could leave the session or programme at any point. Professionals who work with the children were asked to note and inform me if the children appeared to show a negative reaction to engagement in the activities. If a child happened to become distressed at any stage, I would stop the session and seek to reassure the child. If distress was not reduced I would ask the Learning Support Assistant to withdraw the child either from the activity, the session or from the whole procedure.

In addition, parents were asked to give full consent for the participation of their children in the research. They were provided with written information regarding the aims of the study and the data collection process. They were also informed of their right to withdraw the child at any time.

Publication of results complies with the Data Protection Act, 1998. All participants' information has carefully been stored and protected. No names of pupils or schools are attached to either the video-recordings or the checklists. Names of the participants are changed to protect individual's identity and ensure anonymisation.

3.8 Method and data collection

3.8.1 Video recording and analysis

Video recording is the main and most valuable method for collecting and analysing data based on the needs of the current study. Video has been extensively used in research as a tool to record and study social interaction and in particular facial expression, non-verbal behaviour, movements and gesture, eye contact, and personal space (Summerfield, 1983). Video offers the chance to capture live elements and to look closely at specific body movements and listen to vocalisation and also judge social contacts such as eye contact and body contact. Moreover, as Frith et al. (2005) highlight, visual methods can be useful when applied in a study with 'typically hard-to-reach populations or those who are sometimes difficult to engage in research processes, including children and adolescents' (Frith et al., 2005; 189). Despite providing new possibilities, video can also present a number of challenges requiring specific technological and analytical skills from the researcher (Russell, 2007).

In the present study, two video cameras were used to increase the covered area. Video recordings were then transferred to the computer in folders so that each session consisted of two digital video files. I used video editing software in order to synchronise the two video streams without discarding any video segments. Furthermore, although the video camera may enhance the relationship and trust between the researcher and the participant, it can also be obtrusive and affect the participant's behaviour (Russell, 2007). It is therefore essential to take into consideration how the camera will be used in order to minimise any influence on the participants. In this particular study, the cameras were carefully positioned so as to be the least visible to the children who nevertheless were aware of their

presence. In addition, the whole of the intervention sessions were recorded in order to ensure objectivity and overcome any bias from the side of the observer in the case that only specific events would be recorded. Audio-visual data collection has the capacity for completeness of analysis and comprehensiveness of material, reducing the dependence on prior interpretations by the researcher (Cohen et al, 2007: 407).

The video analysis is as follows. After the data collection from the first three groups finished, the first chronological one was used as a pilot for the data analysis. Open observations of the first sessions from first group were necessary in order to establish the criteria and variables to be examined using the structured observation. Video provides a rich amount of interactions and information of real life and selectivity to a certain degree is paramount.

The first session of the intervention lasting approximately 30 minutes was divided in 30 second periods. The aim was to look for the dominant behaviours and actions of each child which were recorded in few words in order to derive the main themes and variables for analysis, as shown in table 3.2.1. Then, a random section from the video recorded session was similarly analysed to define whether the same behaviours were dominant throughout the session, as presented in table 3.2.2. It was clear from this short analysis process that the main behaviours observed were around joining in the activity through the use of language or by attending to the facilitator and around being part of the group or moving away from peers and activity. Therefore, engagement on task and proximity to the group seemed to be the most appropriate variables for analysis in the current study.

Table 3.2.1. Primary observation to define dominant behaviours

0'-30''	1b1 moves carpet, rocking, looks at his friends&me, thumbs game, laughs	1b1 sits quietly, smiles, participates with fingers in the thumb game	1a laughs, partcipates, copies finger movements	1a laughs, looks at me and her friends	1a goes away of the circle on his bum, quickly comes closer again, 1b listens but no participation with hands
30''-1'	looks at me and his friends, no participation with fingers, smiles	smiles participates	laughs participates (not with sounds) looks at her friends	looks at me participates with fingers	1b laughs, starts to use fingers, doesn't copy, makes sounds of game
1'-1'30''	distracted, looks around the room, follows my hand movements with his eyes	looks at Ay who is laughing, still focused and joins actively in the game	keeps laughing, doesn't do the finger movements until I look at her	fixes her trousers, looks at Y who calls out loud, looks at me, participates	1a laughs, makes loud sounds, follows the 'mountain' makes silly movements
1'30''-2'	stares at wall pictures in the cupboard next to him in the class, flapping his hands, joins in with sound	participates, answers to my questions by noding her head	participates with sounds & movements, looks at me, laughs	actively joins in, looks at me and at Y.	participates with sounds and hands, laughs
2'-2'30''	sits quietly, focused&concetrated, keeps eye contact with me	sits quietly and listens	listens, still laughing, looks at me and Y and laughs with his 'jokes'	listens carefully, fixes trousers	listens carefully, asks something, sits quietly
2'30''-3'	looks around for a few seconds but focuses again,	listens, doesn't call out	sits quietly, comes closer to try and open the box	trousers, tries to open the box when I ask her to	calls out 'diamond', listens

Table 3.2.2 Example of session for coding of dominant behaviours

L	0	3	2	2	5	0	4	4	4
AY	1	2	3	2	5	2	4	1	6
AL	3	3	2	3	5	3	4	4	1
D	1	3	1	2	5	2	4	1	6
Y	1	3	1	2	5	2	1	1	1
11'30"-13'30" 0 playing with props, 1 talking, 2 calling out, 3 sitting quietly, 4 drawing, 5 moving place 6 laughing									

At a first stage the following variables were drawn from the observation: a) group norm, b) interaction (verbal/physical), c) initiation/acceptance of interaction, d) eye contact, e) proximity measures (on the periphery/away). Due to time constraints and to the fact that a few variables were challenging for impartial analysis even through the use of video, I focused on two variables a) on/off task (engaged or not in the activity) and b) physical proximity (body contact) and to record these behaviours in 10" periods.

Working together with peers on tasks and participating actively in group activity as well as level of proximity and physical contact and acceptance are important aspects within the social dimension of inclusion (Koster et al., 2009). Therefore, the present study will focus on these two aspects of inclusion and the analysis of the two key variables: engagement on task and spatial/physical proximity/inclusion.

3.8.2 Variables: On/Off task and spatial proximity

The initial observation of the sessions focusing on the dominant behaviours of participation in the activities and interactions with peers, described in section 3.8.1, allowed me to determine the two main variables to be analysed in this study: on off task and spatial proximity.

Maxwell and Pringle (1983) suggest to measure behaviours by operationally defining the categories and scoring and also to measure the occurrence vs. the non-occurrence of a particular aspect of behaviour that can be counted either continuous or during a specific time segment. Structured observation of the videoed sessions was used to measure participation on task and physical proximity. Structured or systematic observation allows the researcher to collect numerical data in order to compare patterns trends, behaviours in different conditions (Cohen et al., 2007). During this type of observation, the categories to be analysed are defined in advance as well as the coding system (Coolican, 2004).

For the purpose of this study engagement/participation on task was operationally defined as follows: the participant is on task when his or her attention is directed towards a person or object used in the session and is either looking, listening or responding to an adult or peer (gestures, signs, words) appropriately or is involved purposefully with the lesson props (eye contact is encouraged but not necessary as is considered an area of difficulty for people with autism). In order to record whether students were on task or off task, each session was divided in 10" periods and the main behaviour was coded for each child. The same procedure was followed for the second variable, spatial proximity. In this category there were three ratings excluded (distance from group), included (close to group/peer) and in contact (physical contact). For engagement on task, the coding was either 'on task'

or ‘off task’ and for inclusion it was marked whether children were ‘away’, ‘in close proximity’ or in ‘physical contact’ with their peers.

All data were inserted into Excel. For engagement of task, the percentage of time during which the pupil was on task was calculated according to task. For the inclusion variable, the mean of scores was calculated sorting the data also according to ‘task’. Percentages and means are discussed in the following chapter.

The scores for engagement of task and inclusion per task and session for all pupils were then inserted into a statistical software package (SPSS). Video was advantageous as apart from facilitating the collection of data, it also allowed me to replay the collected material several times. Thus, it provided the opportunity to develop rating techniques that were reliable and could be reviewed by others. During the structured video observation of the first group, I watched a session and scored the children with regard to their engagement and physical proximity/inclusion. At the end of the intervention programme and analysis, an external rater also watched a randomly selected videoed session and pupil. The session lasted 27 minutes and 30 seconds and was divided in 10 second periods. therefore, the rater gave in total 330 ratings in both engagement (165) and inclusion (165) variables using the same rating grid. An inter-rater reliability analysis using the Intraclass Correlation Coefficient (ICC) was performed to determine consistency among raters.

3.8.3 Interrater Reliability

Interrater Reliability (IRR) was assessed using a two-way mixed, consistency, average-measures ICC (McGraw & Wong, 1996) to assess the degree that coders provided consistency in their ratings of engagement on task (165) and spatial

proximity/inclusion (165) across subjects. The resulting ICC was in the excellent range for both conditions (Cicchetti, 1994). The results for engagement on task ICC = .95 and for inclusion ICC = .91 indicate that coders had a high degree of agreement and suggesting that engagement and physical proximity were rated similarly across the two coders. The high ICC suggests that a minimal amount of measurement error was introduced by the independent coders, and therefore statistical power for subsequent analyses is not substantially reduced. Engagement and inclusion ratings were therefore deemed to be suitable for use in the hypothesis tests of the present study.

3.8.4 Observation profiles and teachers' feedback

Before the start of the intervention and at the end of the programme the teachers of the class were asked to fill in an observational profile either individually or with my help to evaluate potential changes in behaviour as a result of the intervention. The observation profile was designed based mainly on the assessment provided in 'Autism in the Early Years' (Cumine et al., 2000) combined with some elements from the developmental screening test 'Schedule of Growing Skills' (Bellman and Cash, 1987). The profile asked the teacher to give a brief picture of the child noting positive points as well as concerns and then to rate observed behaviours of social interaction which were divided in the following categories: spontaneous use of gaze, spontaneous maintenance of proximity, imitation, turn-taking, initiating, emotional expression and understanding and social behaviour and play. Under each category there were between four and eight behaviours that the teacher had to rate using the following key: N= not present, I=indifferent, D= developing, F=fluent. The observation profile used can be completed by teachers without specialised knowledge and is in line with the standardised assessment tools used to

record children's progress. Teachers were encouraged to request my help if they had any questions or doubts in completing the profile sheet. Pre and post-tests were run to determine whether the effectiveness of the intervention programme for the pupils with autism in the different areas of social interaction. Findings are reported in Chapter 5.

Feedback from some teachers and learning support assistants working with the children complement the case study analyses. These are developed further in Chapters 6 and 7.

3.9 Validity and reliability

3.9.1 Validity

Issues of validity and reliability are key when undertaking research and they can be addressed differently depending on the nature of the design and approaches used. Cohen et al (2011) describe different types of validity and emphasise that it is a requirement in any type of research and should be seen as a matter of degree with the aim to increase validity at all stages of the project.

3.9.1.1 Ensuring validity

When undertaking a mixed methods research, specific issues of validity apply and need to be addressed (Cohen et al, 2011). Threats to validity and steps I took to overcome these will be presented accordingly to the stage of the research project as suggested by the authors (Cohen et al., 2011).

- Design: I chose an adequate timescale by delivering six-week sessions for seven groups involved in the study. The sample, despite being small, was appropriate for the purposes of this study. I also selected appropriate

resources needed for the empirical part of the project, such as content of story, props for the story, music instruments, visual supports, video cameras. I tried to maintain consistency of the programme content across groups and within group by keeping all sessions and materials as identical as possible and to ensure consistency of participants involved. Factors that may have impacted on the validity of the study, such as technical difficulties or external parameters are discussed previously in this chapter and later in the analyses of the case studies (Chapters 6 and 7) in more detail.

- *Methodology*: Validity was maximised by choosing a mixed methodology (qualitative and quantitative) for answering the research questions and different tools for collecting the data which can also grasp the complexity of data and different human behaviours (video structured and unstructured observation, observation checklist, teachers' feedback, monkey task). Findings from all sources of data were triangulated.

- *Data collection*: I tried to minimise reactivity effects, defined by Cohen et al (2011) as participants behaving differently when scrutinised or being placed in new situations. This was achieved by placing for example the cameras in discrete places out of direct contact of pupils, and by ensuring that myself and other adults present during the programme would actively join and avoid observing by distance and taking notes. Although the intervention was new for all pupils, it took place in their school and if needed a familiar adult was involved. In addition, all participants attended

the same programme to ensure fairness. There was no drop out amongst participants and all pupils were encouraged to attend all sessions if possible. Absences due to medical reasons could not be avoided but were stated in the analysis. All teachers returned the observation checklists and I ensured that checklists were completed within appropriate required timeframe for pre- tests and post- tests.

- *Data analysis:* my priority was to ensure optimum objectivity in the analysis and interpretation of data. Scoring of the two variables (engagement and inclusion) was recorded taking into account the abilities and difficulties of the individuals with autism as there can be considerable differences according to their position on the spectrum and their individuality. Adam Ockelford and Arielle Bonneville Roussy agreed moderation of scoring system for the two variables and an external objective viewer followed the same process of scoring to ensure interrater reliability. I used appropriate statistical tests based on the distribution of the data and the small sample during the quantitative analyses and followed a clear coding for the qualitative data. Case study analysis focused on the two same variables that were analysed during the structured observation of videos: engagement on task and inclusion. To ensure face validity, I selected appropriate variables to measure engagement on task and inclusion as well as appropriate tools to collect evidence and answer accurately to the research questions. To this purpose, a strict observation grid was completed after watching video-recorded sessions of the intervention programme.

- *Data reporting*: I ensured correct and accurate reporting of the statistical findings by including all data, without being selective. All research questions were answered and all interpretations are supported and sustained by the data. These steps ensure internal and external validity, by accurately describing the data and findings and by ensuring adequate transferability of the findings.

3.9.2 Reliability

According to Brock-Utne (1996), reliability is a precondition of validity and applies to both quantitative and qualitative research. Cohen et al. (2011) define reliability as consistency and replicability of results over time, over data collection tools and over participants. In other words, a research study is reliable when it clearly shows that findings would be similar if it was undertaken with a similar group of participants in a similar context. There are different forms of reliability that apply to quantitative and qualitative research (Cohen et al., 2011). Measures I have taken to ensure those different types of reliability will be presented in the section that follows.

3.9.2.1 Ensuring reliability

Reliability as stability: this type of reliability refers to consistency over time and over similar research samples. A reliable research method or data collection tool will produce similar data and findings from similar participants over time. To do this, I considered carefully what the appropriate time frame was for examining the repetition of task variable and completion of observation checklists before and after the intervention. Repetition of task was measured on a weekly basis, which

was the most appropriate length so that participants would not be too influenced with other learning tasks during their school life. The checklist was completed by the teachers just before and after the intervention on order to minimise any external factors influencing the behaviours of children with autism. The post-test took into account the performance during the six weeks of the intervention programme. In relation to reliability as stability over a similar sample I undertook the intervention and tests simultaneously to seven groups of participants who were very closely matched on significant characteristics such as age, gender and abilities and I obtained similar results. As mentioned above the intervention, tests and examined variables could be replicated easily in a future study involving participants with similar features. Cohen et al (2011) define the parameters for reliability during observations. In order for the observation findings to be reliable interpretations would be the same if observations took place at a different time or place or if the researcher focused on different phenomena. For the purpose of this study, I used video observation for both structured and open observation which allows to review events and ensure reliable interpretations. The qualitative analysis of the video recorded sessions focused on behaviours around engagement on task and inclusion in the group, which were the main variables of coding during the structured observations. Different observers with the same theoretical framework in the pilot study, interpreted the behaviours observed in a similar way.

This lead to ensuring reliability as equivalence, which was achieved through inter-rater reliability, which was assessed using a two-way mixed, consistency, average-measures ICC (McGraw & Wong, 1996). This method evaluated the degree in which observers provided consistency in their ratings of engagement on task and

spatial proximity/inclusion across subjects. The resulting ICC was in the excellent range for both conditions (see section 3.8.3).

3.10 Conclusion

This chapter presented in detail the data collection and analysis process by examining examples and made specific reference to the different tools used, including design of the intervention and sampling. It further discussed the choice of using a mixed methods approach as a suitable research methodology for this particular study. The use of video in research was explored and the reason for being the focus in this project. The intervention programme was specifically designed for this research study based on an original story and related music and movement tasks.

The following chapters present the main findings from the statistical analysis, qualitative data as well as the two detailed case studies and discuss in detail the findings of all procedures.

Chapter 4 Quantitative Analysis Results

In order to address the specific objectives of this study presented in section 3.2 I firstly undertook structured observation of the video recorded sessions of the intervention programme. Quantitative analyses of the data evaluated to what extent engagement on task and inclusion among children (5–7 years old) with autism attending mainstream schools were enhanced by music, dance or a combination of both. This chapter presents the findings from the quantitative analysis of the data.

As described in the procedures section of the methodology chapter (3.6), structured observation of the recorded session formed the main basis of this analysis. All six sessions from the seven groups were video recorded and a rating was given for every 10 second segments on engagement on task and inclusion in the group, for all pupils. The percentage of time being on task and the mean scores of inclusion were inserted on SPSS arranged by task and produced the results reported in this chapter.

Descriptive Statistics

A total of 42 children (21 girls and 21 boys), six in each of the seven groups participated in the study. All children, aged 5-7 years old, were recruited from five primary schools in London. Each group contained boys and girls and one child on the autism spectrum. There were twenty-one girls and twenty-one boys in total, among which 2 girls and five boys on the autism spectrum. One boy and one girl, two in total, were non-verbal. Table 4.1 provides some information on the pupils of each group with some additional details for the participants who were present per session.

Table 4.1. Descriptive Statistics- Participants

Group	Age	ASC Gender	ASC Verbal	Number of Boys	Number of Girls	S1	S2	S3	S4	S5	S6
B	5-6	Boy	Verbal	3	3	5(N)	6	6	6	6	6
SG	7-8	Girl	Non-V	2	4	5(N)	5(N)	5(N)	5(N)	6	5(N)
H	5-6	Boy	Verbal	4	2	6	5(A)	6	6	4(A,N)	6
MJ	6-7	Boy	Non-V	3	3	6	5(A)	6	6	5(N)	6*
MR	6-7	Boy	Verbal	4	2	6	5(A)	6	5(A)	5(A)	6
MH	4-5	Boy	Verbal	3	3	6	6	6	5(A)	5(N)	5(N)
O	4-5	Girl	Verbal	2	4	6	6	5(N)	6	6	6

Notes. Groups are represented by initials of their coded names. The columns provide details of the participants per group and numbers represent how many pupils attended per session (S1–S6). (N) and (A) indicate whether the absent pupil was 'neurotypical' or autistic.

4.1 Engagement on task

The level of engagement on task was calculated by using the percentage of time during which each pupil was participating on the four different tasks (music, dance, music and dance, other) in each session. It was hypothesised that due to the small sample, the data would be non-normally distributed. I ran normality checks on the data separately for pupils with autism and their peers and according to the task they were involved in. The histograms revealed that the data were skewed with large values of skewness and kurtosis. Therefore, non-parametric tests were run in SPSS to evaluate the level of engagement of pupils with autism and their neurotypical peers and compare their scores according to the task they were involved in and the session they attended. I set a significance value threshold of $p<.10$ due to the small sample size.

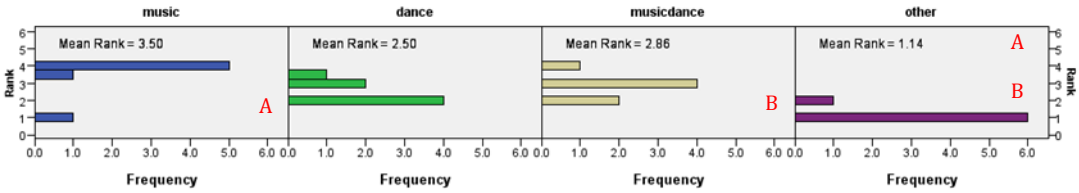
4.1.1 All tasks ASC and Non ASC Participants

As the same participants took part in the same tasks and we have several related samples, Friedman's ANOVA was selected. In order to see whether there was a change between the levels of engagement and the task involved and whether they differed between the participants, Friedman's ANOVAs were run separately for

the autistic pupils and their neurotypical peers. Effect sizes were calculated to estimate the effect of the variables in the population and the strength of the intervention. According to Cohen (1992) cited in Field (2013) the following apply with regard to effect sizes: r= .10 (small effect), r= .30 (medium effect), r= .50 (large effect).

For autistic children, the level of engagement changed according to the task they were taking part in (music, dance, music and dance, other), $\chi^2(3) = 12.65$, p = .005. Pairwise comparisons with adjusted significance (p<.10) revealed two statistically significant results; the difference of engagement levels between other-music, z = 3.42, p = .004 and between other and music and dance, z = 2.49, p = .078. The mean rank test results are presented in Figure 4.1. They indicate that participants with autism were significantly more engaged during music, followed by music and dance in relation to other. A first post-hoc Wilcoxon signed rank test revealed that participants with autism were significantly more engaged during 'music and dance' compared with 'other' T = 28, p = .02, with a very large effect size, r = -.89. Similarly, children with autism were more on task during music activities as compared to all other tasks T = 27, p = .03, with a very large effect size. R = -.83. The other pairwise comparisons were not significant.

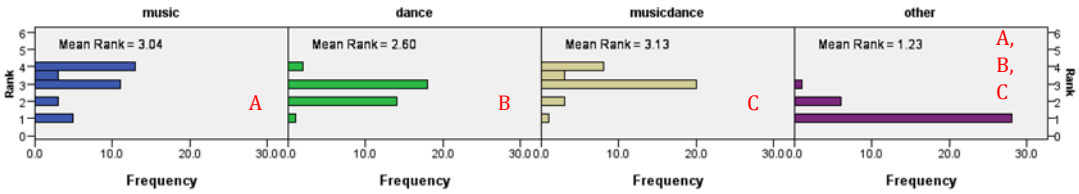
Figure 4.1. Related samples Friedman's analysis of variance by ranks of engagement in tasks for autistic children.



Notes. N= 7. Mean ranks of scores from level of engagement for pupils with autism during music, dance, music and dance and other throughout the sessions of the intervention programme. The vertical axis represents the mean rank from the engagement on task scores. The horizontal axis represents the number of children with autism participating in the intervention programme. A and B refer to the paired significant results.

For the neurotypical peers, the level of engagement also changed according to the task they were undertaking, $\chi^2(3) = 54.74$, $p < .001$. Figure 4.2 shows the ranked scores of engagement, which clearly highlight the difference according to the task involved. Pairwise comparison revealed three statistically significant results. More specifically, post hoc Wilcoxon signed rank test showed that children participated more during 'music' tasks compared to any 'other activities' T = 535, p< .001. The effect size was large, r = .60. Similarly, they were significantly more engaged during dance compared to other, T = 24, p = .00, with a very large effect size r = -.80. During music and dance combined, children were more on task in relation to other tasks T = 622, p< .001. The effect size was very large, r = .85.

Figure 4.2. Related samples Friedman's analysis of variance by ranks of engagement in tasks for neurotypical children



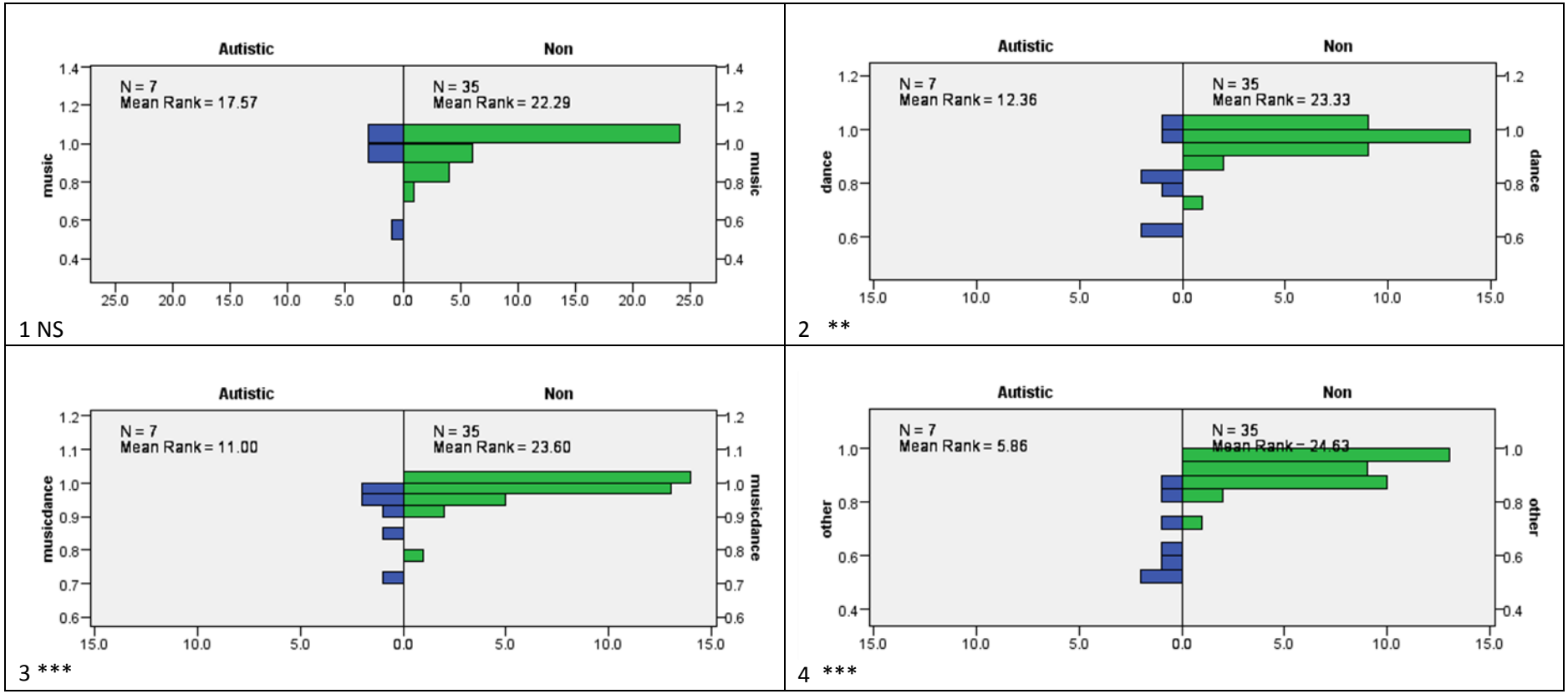
Notes. N= 35. Mean ranks of scores from level of engagement for non-autistic pupils during music, dance, music and dance and other throughout the sessions of the intervention programme. The vertical axis represents the mean rank from the engagement on task scores. The horizontal axis represents number of non-autistic children participating in the intervention programme. A, B and C refer to the paired significant results.

4.1.2 By Task and ASC/Neurotypical peers

Next, I compared any difference in the levels of engagement between children with autism and their neurotypical peers based on the four different tasks. Mann-Whitney tests were used to evaluate these differences in engagement between the autistic pupils and the neurotypical participants according to the task involved. As the data was skewed the most appropriate statistical test was Mann-Whitney U. These are presented in Figure 4.3.

The level of engagement according to whether the children were autistic or non-autistic was significant for three of the four tasks. For dance, the level of engagement was different between the autistic children (Mdn = .81) and their neurotypical peers (Mdn = .98), U = 186.50, z = 2.18, p = .03, with a medium effect size r = .34. Similarly, for music and dance the level of participation on task was different between the children with autism (Mdn = .95) and their non-autistic peers (Mdn = .99), U = 196, z = 2.53, p = .01, with a medium effect size, r = .39. Finally, during other activities there were significant differences in the level of engagement between autistic (Mdn = .61) and non-autistic participants (Mdn = .93), U = 232, z = 3.70, p< .001. The effect size was large, r = .57. The level of engagement between children with autism (Mdn = .95) and their non-autistic peers (Mdn = 1.00) was similar for music. Although the Mann-Whitney test compares the mean ranks and not the medians, according to Field (2013) it is more appropriate to report the medians in non-parametric tests.

Figure 4.3 Mann Whitney test of engagement in tasks for autistic pupils and their neurotypical peers



Notes. N=7 autistic pupils, N=35 neurotypical pupils. The horizontal axis represents the number of participants and the vertical axis represents the rank comparison between autistic and non-autistic participants. Asterisks indicate statistical significance at the $p < .10$ (*), $p < .05$ (**) and $p < .001$(***) level.

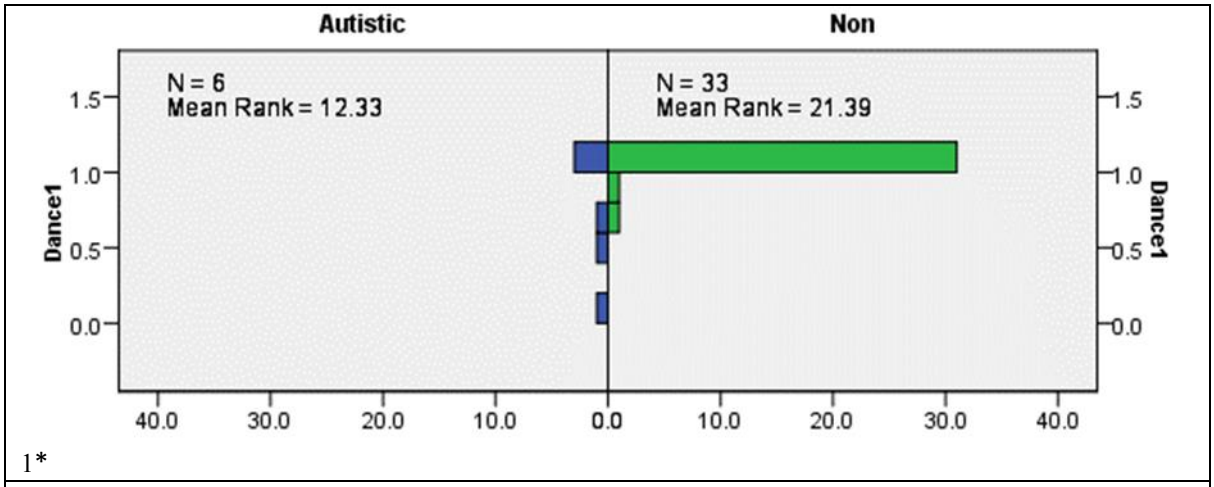
1. Mean ranks of scores of engagement of pupils with autism and their peers during music throughout the programme.
2. Mean ranks of scores of engagement of pupils with autism and their peers during dance throughout the programme.
3. Mean ranks of scores of engagement of pupils with autism and their peers during music and dance throughout the programme.
4. Mean ranks of scores of engagement of pupils with autism and their peers during other throughout the programme.

4.1.3 By task and session ASC/N

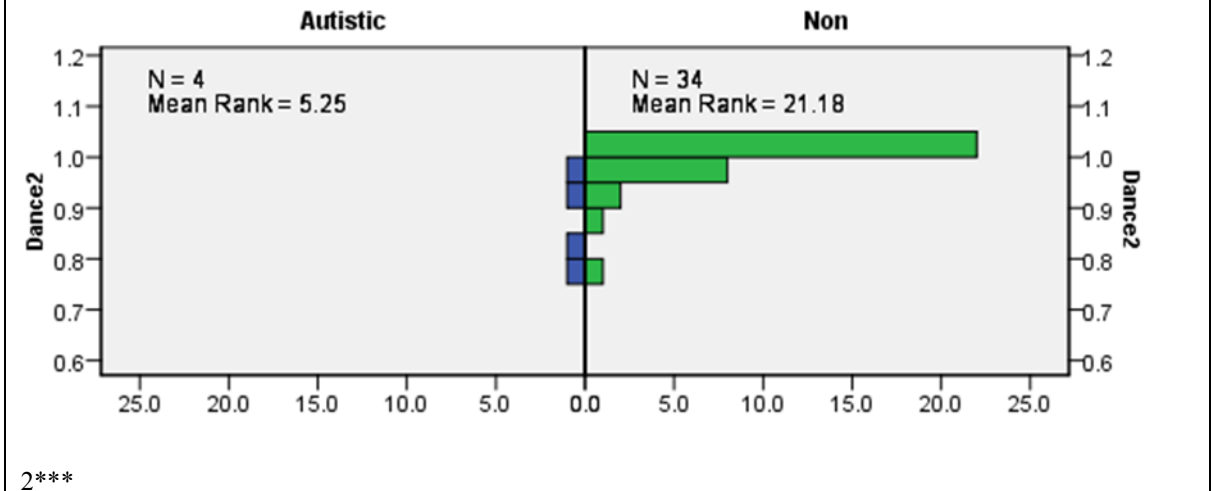
In order to compare the level of engagement according to the specific task involved and the number of session between pupils with autism and their neurotypical peers, Mann Whitney tests were run as data were skewed.

The level of engagement was significantly different between the children with autism and their neurotypical peers during the dance tasks for five out of six sessions ($p<.10$). Results are shown in Figure 4.4. Only during session 5 children with autism and their neurotypical peers were similarly engaged. During dance tasks in the first session, non-autistic peers were more engaged than their peers with ASC. $U = 145$, $z = 3.09$, $p = .76$, with medium effect size, $r = .48$. Similarly, in the second session they were also more engaged during the dance tasks; $U = 125$, $z = 3.02$, $p = .003$, with medium effect size $r = .47$. In session 3, we observe again the same pattern, where neurotypical peers score higher than children with autism, $U = 184$, $z = 2.64$, $p = .01$, with medium effect size $r = .41$. Finally, in sessions 4 ($U = 148.5$, $z = 2.77$, $p = .005$, medium effect size $r = .43$) and 6 ($U = 136$, $z = 3.16$, $p = .017$, medium effect size $r = .49$), there is a significant difference between the levels of engagement during dance for children with autism and their peers.

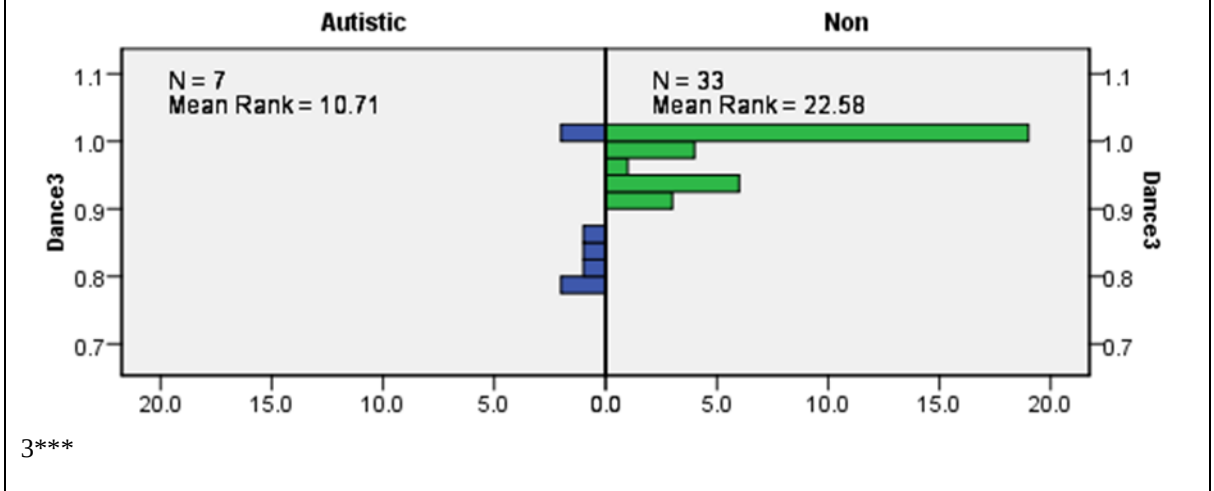
Figure 4.4 Mann Whitney test of engagement in tasks for autistic pupils and their neurotypical peers during dance per session.



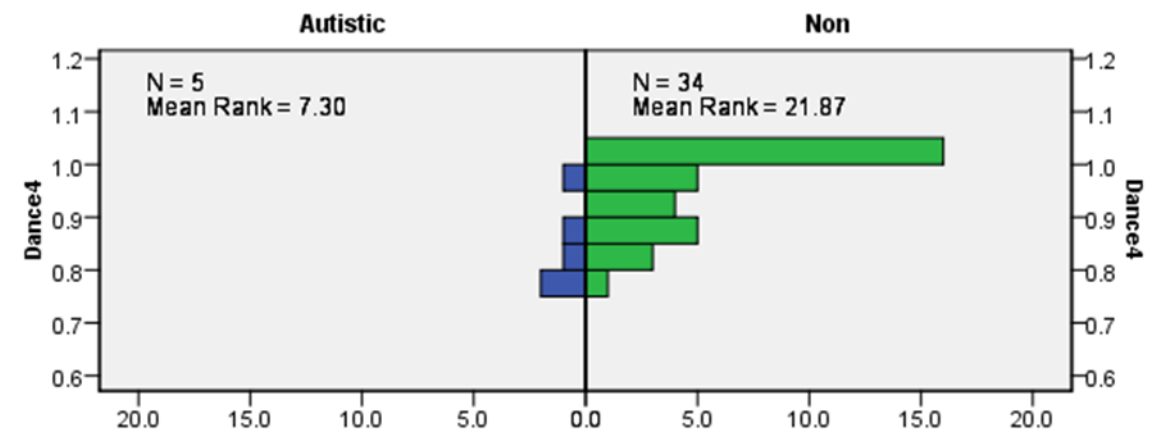
1*



2***



3***



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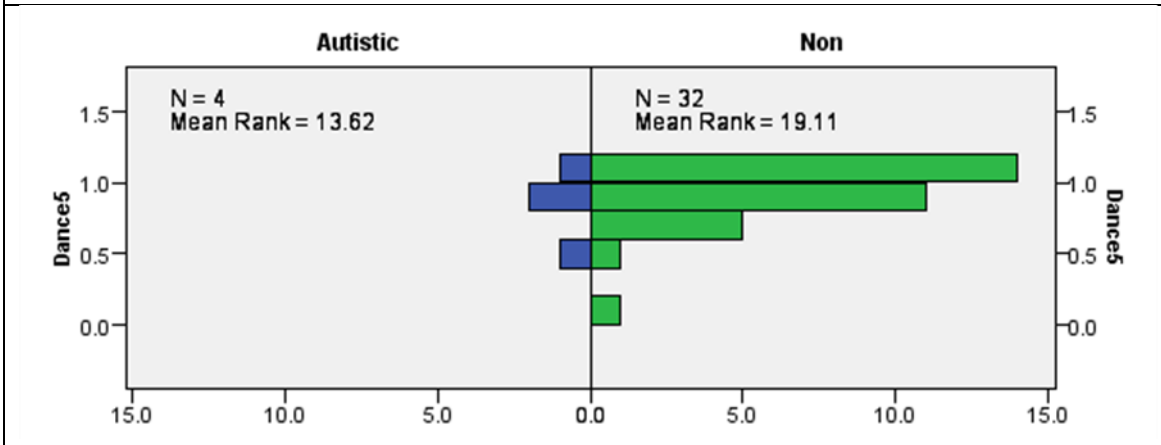
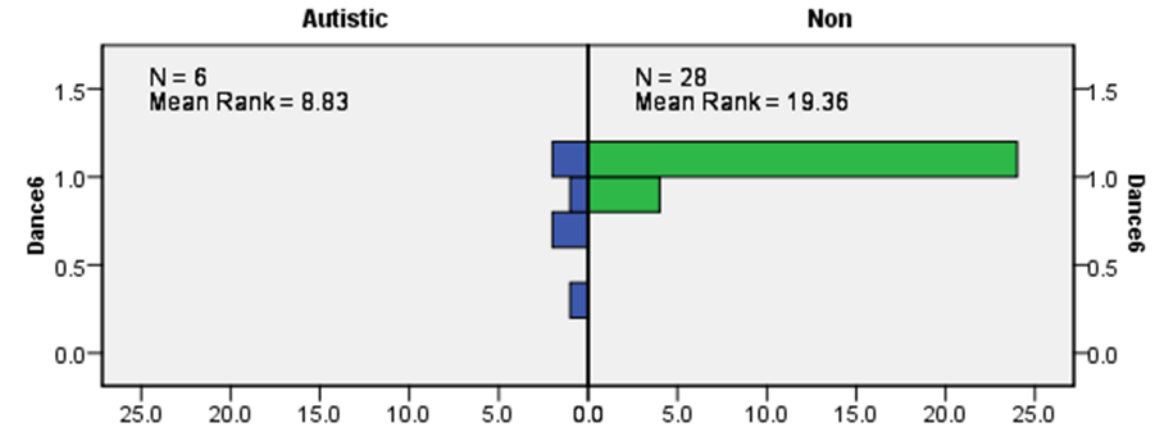


5 NS



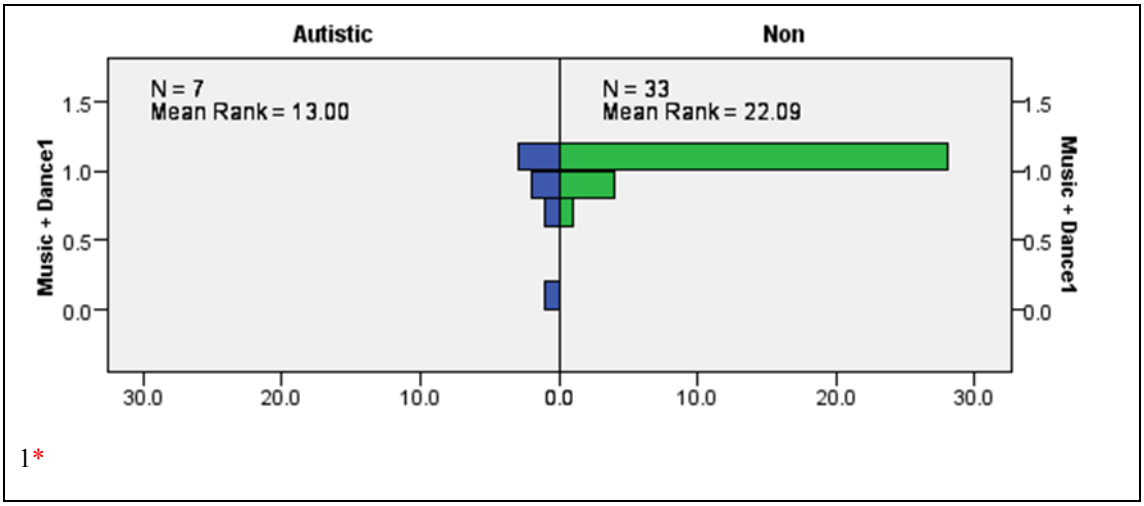
6**

Notes. N=7 autistic pupils, N=35 neurotypical pupils. The horizontal axis represents the number of participants and the vertical axis represents the rank comparison between autistic and non-autistic participants. Asterisks indicate statistical significance at the 10% (*), 5 %(**) and 1 %(***) level.

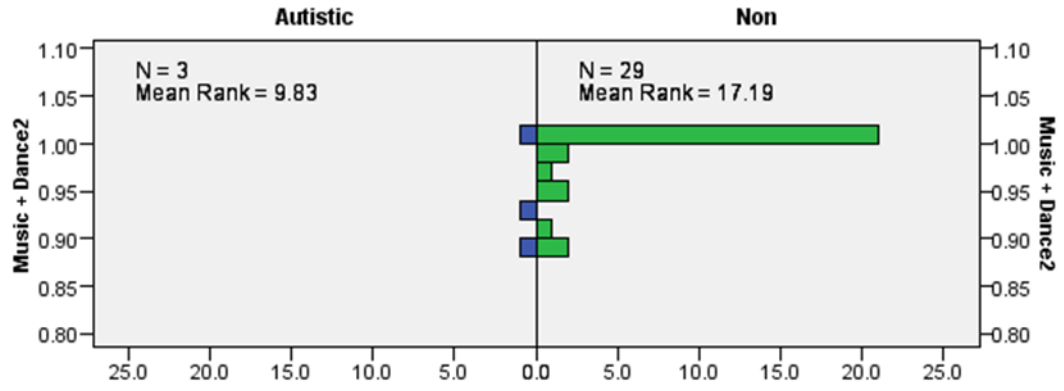
1. Mean ranks of scores of engagement of pupils with autism and their peers during dance in session 1
2. Mean ranks of scores of engagement of pupils with autism and their peers during dance in session 2
3. Mean ranks of scores of engagement of pupils with autism and their peers during dance in session 3.
4. Mean ranks of scores of engagement of pupils with autism and their peers during dance in session 4.
5. Mean ranks of scores of engagement of pupils with autism and their peers during dance in session 5.
6. Mean ranks of scores of engagement of pupils with autism and their peers during dance in session 6.

For music and dance, as shown in Figure 4.5, the level of participation was significantly different in three out of six sessions ($p<.10$). More specifically, in the first session during music and dance there was a significant difference of the levels of engagement on task between neurotypical pupils and their peers with autism; $U = 168$, $z = 2.56$, $p = .06$, with medium size effect, $r = .40$. Similarly, in session 4 we notice a difference in the degree of engagement on task during music and dance activities according to whether pupils have autism or not ($U = 128.5$, $z = 2.02$, $p = .067$, medium size effect $r = .32$). Finally, in the last session, during music and dance neurotypical peers are more engaged compared with their peers with ASC; $U = 128.5$, $z = 2.7$, $p = .042$, medium to large size effect $r = .42$. In sessions 2, 3 and 5 the level of engagement during music and dance was similar for children with autism and their peers.

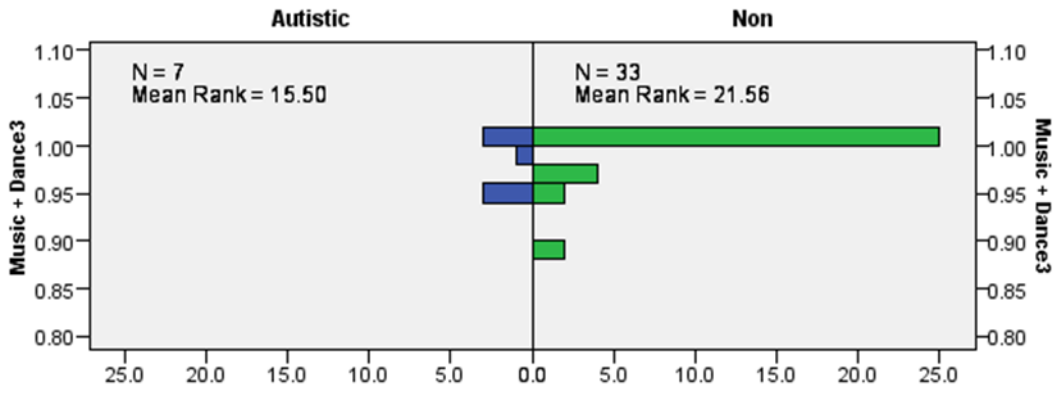
Figure 4.5 Mann-Whitney test of engagement in tasks for autistic pupils and their neurotypical peers during music and dance per session



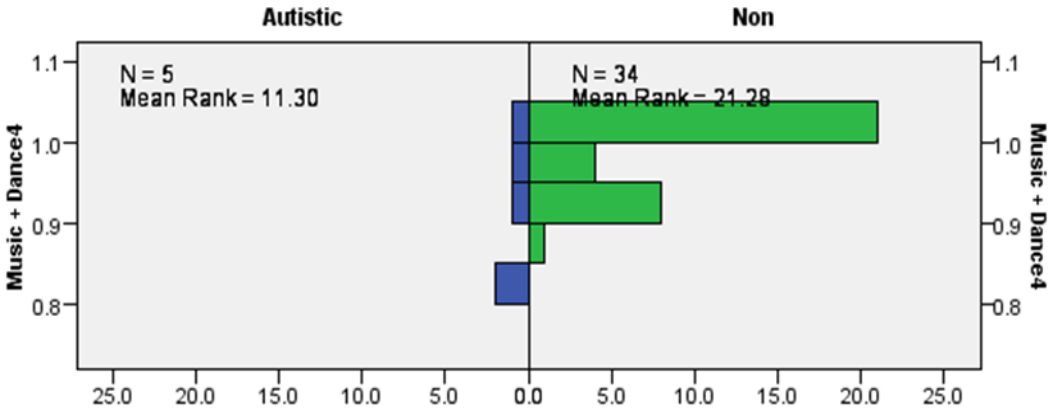
1*


Autistic
Non
N = 3
Mean Rank = 9.83
N = 29
Mean Rank = 17.19
Music + Dance2
1.10
1.05
1.00
0.95
0.90
0.85
0.80
25.0
20.0
15.0
10.0
5.0
0.0

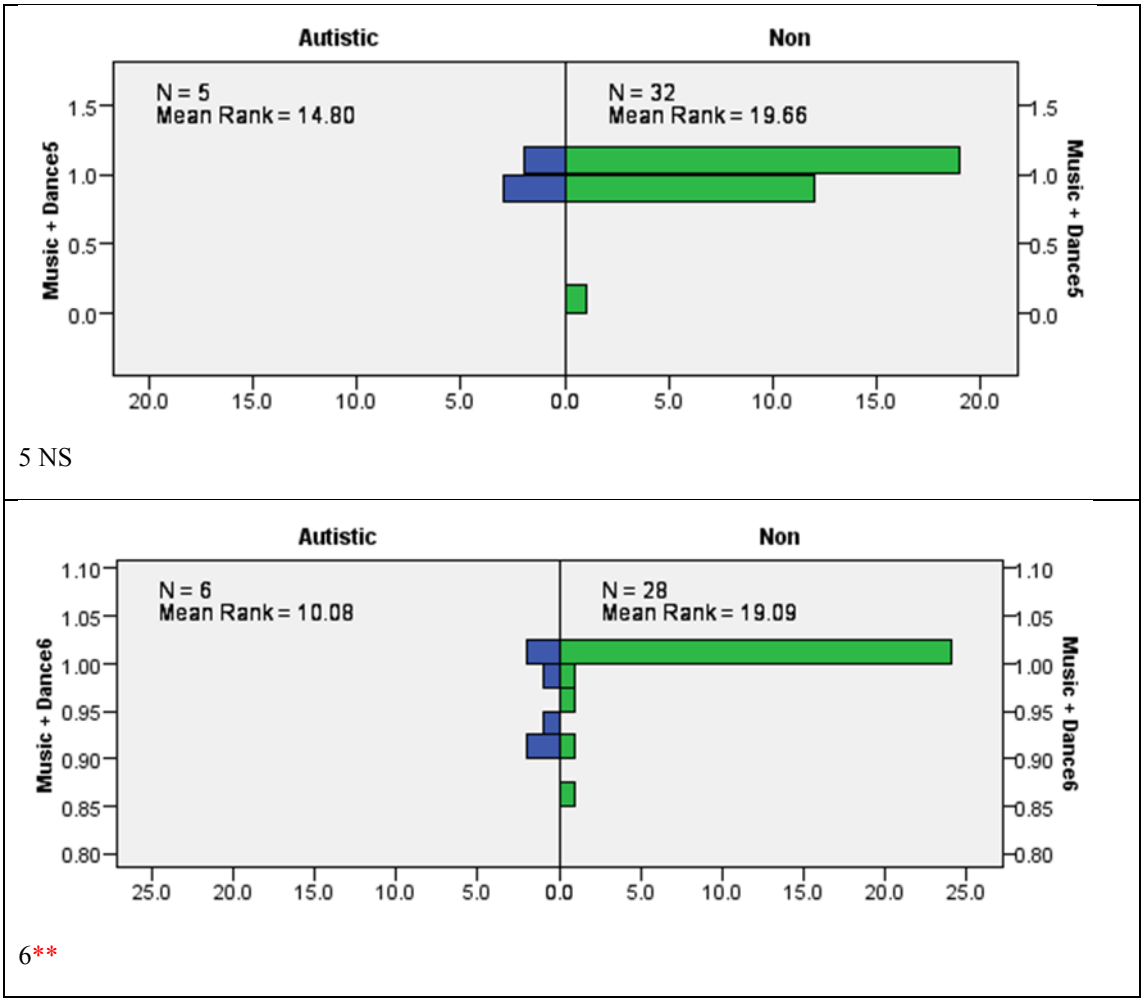
2 NS


Autistic
Non
N = 7
Mean Rank = 15.50
N = 33
Mean Rank = 21.56
Music + Dance3
1.10
1.05
1.00
0.95
0.90
0.85
0.80
25.0
20.0
15.0
10.0
5.0
0.0

3 NS


Autistic
Non
N = 5
Mean Rank = 11.30
N = 34
Mean Rank = 21.28
Music + Dance4
1.1
1.0
0.9
0.8
25.0
20.0
15.0
10.0
5.0
0.0

4*

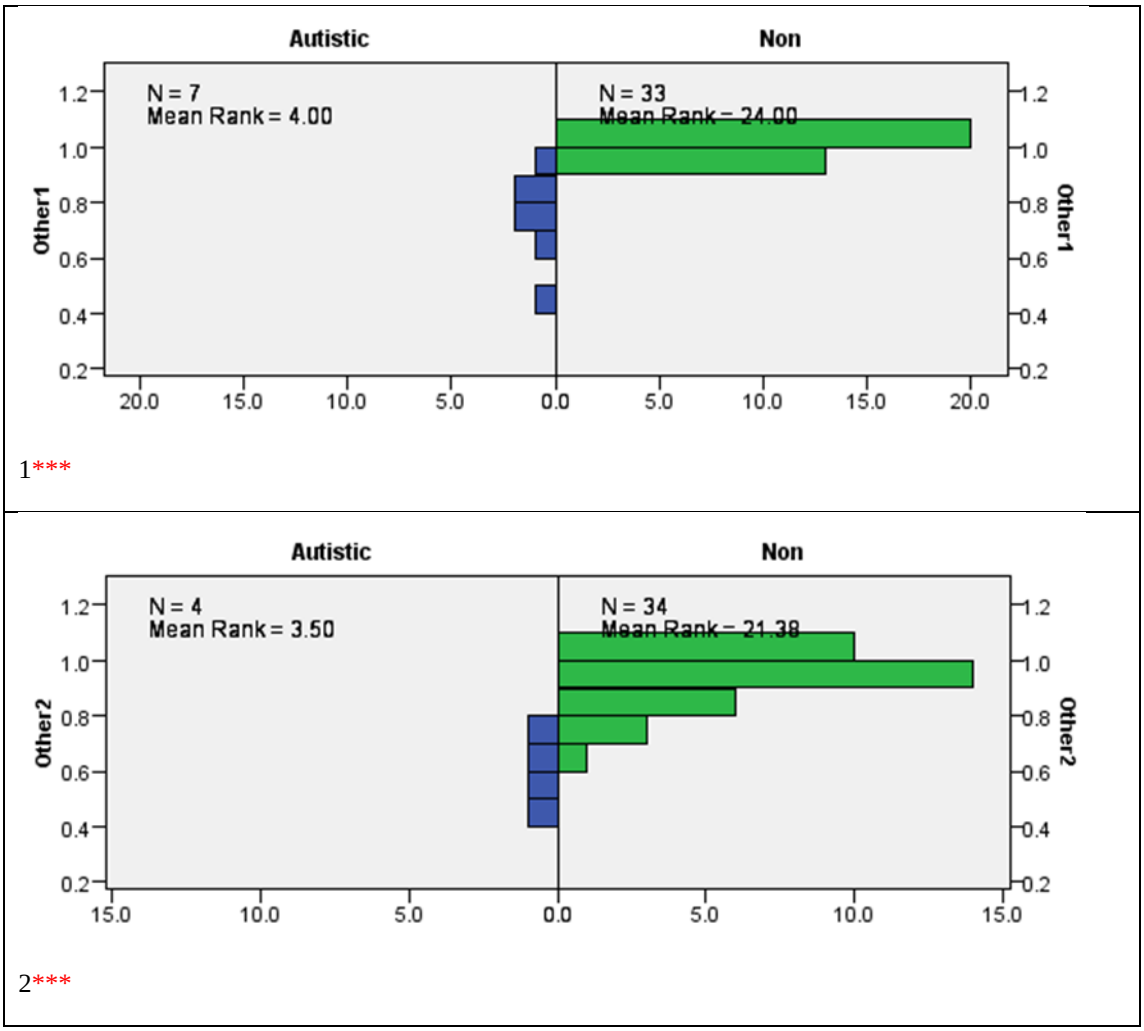


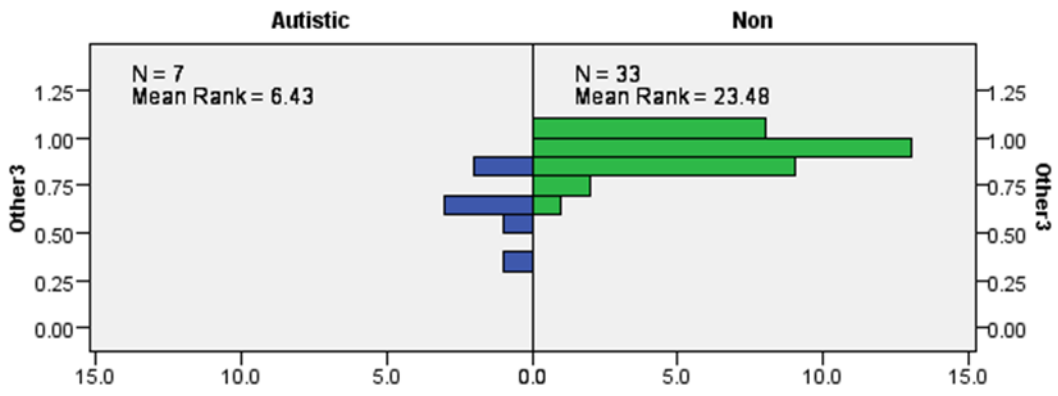
Notes. N=7 autistic pupils, N=35 neurotypical pupils. The horizontal axis represents the number of participants and the vertical axis represents the rank comparison between autistic and non-autistic participants. Asterisks indicate statistical significance at the 10% (*), 5 %(**) and 1 %(***) level.
1. Mean ranks of scores of engagement of pupils with autism and their peers during music and dance in session 1
2. Mean ranks of scores of engagement of pupils with autism and their peers during music and dance in session 2
3. Mean ranks of scores of engagement of pupils with autism and their peers during music and dance in session 3.
4. Mean ranks of scores of engagement of pupils with autism and their peers during music and dance in session 4.
5. Mean ranks of scores of engagement of pupils with autism and their peers during music and dance in session 5.
6. Mean ranks of scores of engagement of pupils with autism and their peers during music and dance in session 6.

During 'other' activities the degree of participation on task between children with ASC and their non-autistic peers was significantly different for all the sessions of the intervention programme. Results are shown in Figure 4.6. In particular, in session 1, children with autism were less engaged during other tasks (U = 231, z = 4.4, p< .001, with very large effect size, r = .68). The same was found for session 2 during other activities, U

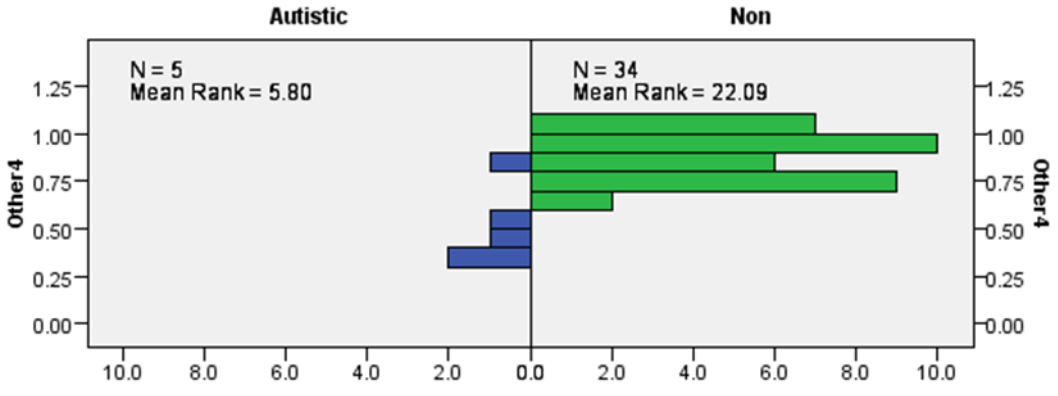
= 132, z = 3.08, p< .001, with large effect size r = .48. Similarly, in session 3 neurotypicals were more engaged during 'other' tasks: U = 214, z = 3.52, p< .001, with large effect size, r = .54. In the fourth session, level of engagement was significantly different between the two children with autism and their peers; U = 156, z = 3.00, p = .001, with large effect size r = .46. Finally, significant differences were found for sessions 5 (U = 139, z = 2.62, p = .006, with medium to large effect size, r = .41) and 6 (U = 145, z = 2.80, p = .004, with medium to large effect size, r = .43).

Figure 4.6 Mann-Whitney test of engagement in tasks for autistic pupils and their neurotypical peers during other per session

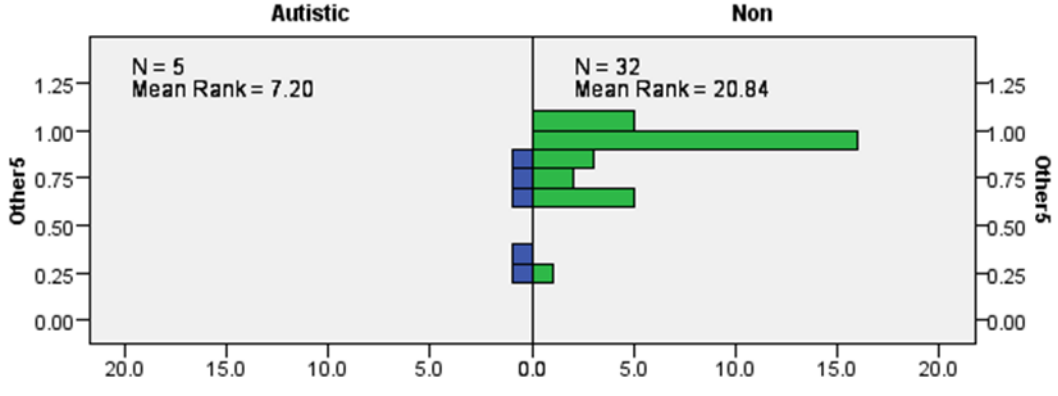



Autistic
Non
N = 7
Mean Rank = 6.43
N = 33
Mean Rank = 23.48
Other3
1.25
1.00
0.75
0.50
0.25
0.00
15.0
10.0
5.0
0.0
5.0
10.0
15.0

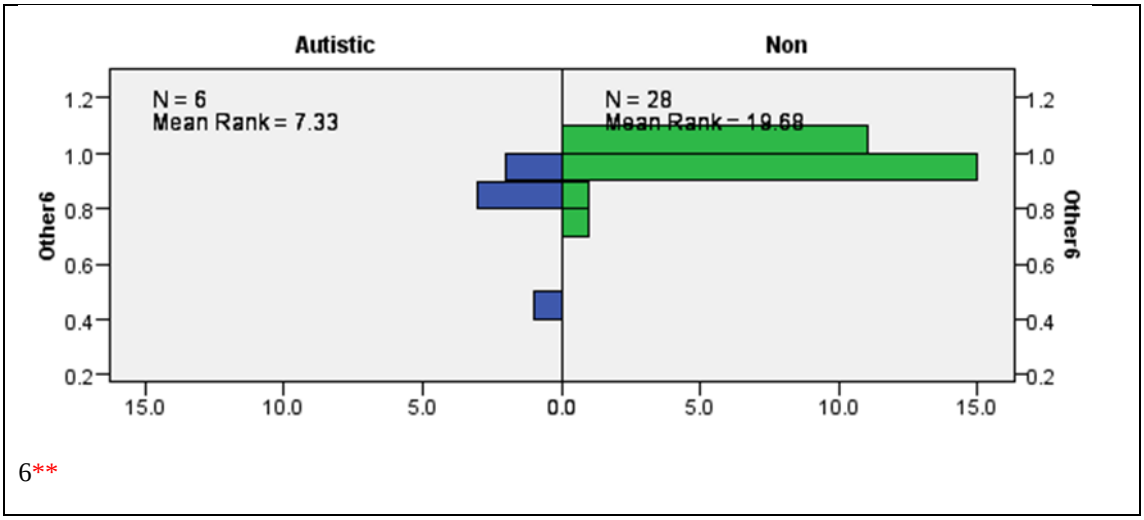
3***


Autistic
Non
N = 5
Mean Rank = 5.80
N = 34
Mean Rank = 22.09
Other4
1.25
1.00
0.75
0.50
0.25
0.00
10.0
8.0
6.0
4.0
2.0
0.0
2.0
4.0
6.0
8.0
10.0

4***


Autistic
Non
N = 5
Mean Rank = 7.20
N = 32
Mean Rank = 20.84
Other5
1.25
1.00
0.75
0.50
0.25
0.00
20.0
15.0
10.0
5.0
0.0
5.0
10.0
15.0
20.0

5**



6**

Notes. N=7 autistic pupils, N=35 neurotypical pupils. The horizontal axis represents the number of participants and the vertical axis represents the rank comparison between autistic and non-autistic participants. Asterisks indicate statistical significance at the 10% (*), 5 %(**) and 1 %(***) level.
1. Mean ranks of scores of engagement of pupils with autism and their peers during other in session 1
2. Mean ranks of scores of engagement of pupils with autism and their peers during other in session 2
3. Mean ranks of scores of engagement of pupils with autism and their peers during other in session 3.
4. Mean ranks of scores of engagement of pupils with autism and their peers during other in session 4.
5. Mean ranks of scores of engagement of pupils with autism and their peers during other in session 5.
6. Mean ranks of scores of engagement of pupils with autism and their peers during other in session 6.

During the music tasks the level of engagement between children with autism and their neurotypical peers was similar for all the sessions (sessions 1,3,4,5,6). Music was not performed as a task on its own during the second session, as it was either accompanied by dance or movement tasks were performed without music. Throughout the intervention programme when children listened to music they would start to dance, therefore the music task was classified as music and dance. This was particularly the case in session 2 for all the groups as pupils started moving when listening to the relaxing music used in session 1 as well as the piece used in session 2 to introduce the new task. Similarly, in sessions 3 and 4 most pupils would dance when African drums music was playing. Finally, in session 5 and 6 participants initiated movement when they heard the toy story soundtrack used for the main task.

4.1.4 Summary of results for engagement on task

Non-parametric tests were run in order to evaluate the level of engagement of all participants during the different tasks throughout the intervention programme. I drew comparisons between the levels of engagement of autistic and neurotypical peers during the four tasks (music, dance, music and dance, other) and across the different sessions. Results showed that autistic pupils were more engaged during music and then during music and dance, especially in relation to 'other'. Neurotypical peers were also more engaged in all three tasks: music, dance, and music and dance as opposed to other tasks, with slightly higher scores during music and dance combined. Interestingly, all participants – pupils with autism and their neurotypical peers – were equally engaged only during music throughout the intervention programme. In all other tasks, the level of engagement was different across neurotypical and autistic participants and sessions. During music and dance, significant difference was noted in three out of six sessions. For dance, in five out of six sessions and finally during other, autistic pupils were less engaged than their peers in all six sessions of the programme. Table 4.2 summarises the tests of the statistical analysis and the results with emphasis on the significant comparisons. It also presents the main significant interpretation of findings and the effect sizes.

Table 4.2 Engagement on Task

Question - Test	Result	Significance	Note
Engagement on task during all tasks (music, dance etc.) for autistic pupils Friedman's ANOVA-Wilcoxon signed rank	Change of level of engagement according to task involved	Significant difference between • Music-other • Music&dance-other	Effect sizes are large *When task involves music, engagement is higher*

Engagement on task during all tasks (music, dance etc.) for neurotypical pupils Friedman's ANOVA-Wilcoxon signed rank	Change of level of engagement according to task involved	Significant difference between • Dance-other • Music-other • Music&dance-other	Effects sizes are large *Other is the only task for lower engagement*
Comparison of engagement between autistic and non-autistic pupils in all four tasks	Change of level of engagement according to task involved	Significant difference between pupils during • Dance • Music&dance • Other	*Music is the only task of equal engagement*
Comparison of engagement on tasks between autistic pupils and their neurotypical peers during MUSIC per session	No difference in the level of engagement for pupils with autism and their peers	None of the comparisons were significant (no music in session 2)	*All participants were equally engaged during music in all the sessions*
Comparison of engagement on tasks between autistic pupils and their neurotypical peers during DANCE per session.	Difference in the level of engagement between pupils with autism and their peers in five out of six sessions.	Levels of engagement was different during • Dance1, 2,3, 4 and 6	*Only in session 5 during dance pupils with autism and their neurotypical peers were equally engaged with their peers*
Comparison of engagement on tasks between autistic pupils and their neurotypical peers during MUSIC AND DANCE per session.	Difference in the level of engagement between pupils with autism and their peers in three out of six sessions.	Levels of engagement was different during • Music and Dance 1, 4 and 6	*NS in 2,3 and 5*
Comparison of engagement on tasks between autistic pupils and their neurotypical peers during OTHER per session.	Difference in the level of engagement between pupils with autism and their peers in all sessions.	Level of engagement was different during 'other' in all six sessions.	*Effect size is large.*

4.2 Spatial proximity/ Inclusion

The second variable, spatial proximity/ inclusion in relation to the group was calculated by using the mean of scores of how much a pupil was included in the group during the four different tasks (music, dance, music and dance, other) in each session. In order to calculate the mean, a score was recorded every 10" periods of time- 1= excluded, 2= included, 3= in physical contact, with 3 being the highest, optimal score. Due to the small number of participants and the data being non normally distributed, non-parametric tests were run in SPSS to evaluate the level of inclusion of pupils with autism and their neurotypical peers and compare their scores according to the task they were involved in and the session they attended.

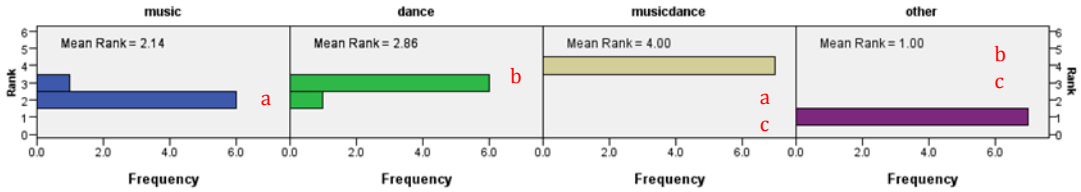
4.2.1 All tasks ASC and Neurotypical Participants

As the same participants took part in the same tasks and we have several related samples, Friedman's ANOVA was selected. In order to see whether there was a change between the levels of inclusion and the task involved, Friedman's ANOVA was run separately for the autistic pupils and their neurotypical peers.

For autistic children, the level of inclusion changed according to the task they were taking part in (music, dance, music and dance, other), $\chi^2(3) = 19.97$, $p < .001$. Results are shown in Figure 4.7. Pairwise comparisons revealed three statistically significant results; the level of inclusion was significantly different between other and dance, z= 2.69, p= .043, other and music and dance; z= 4.34, p< .001 and music- music and dance, z=- 2.69. p= .043. Post hoc Wilcoxon signed rank test showed that pupils with autism were more included in the group during dance as compared to other, T=28, z= 2.36, p= .01, with a large effect size r= .85 as well as during music and dance in comparison to other; T= 28, z= 2.37, p= .01, with a large effect size, r= .89. Finally, autistic participants were more in physical

proximity/contact with their peers during music and dance as opposed to music (T= 0, z= -2.36, p= .018, large effect size, r= -.89.)

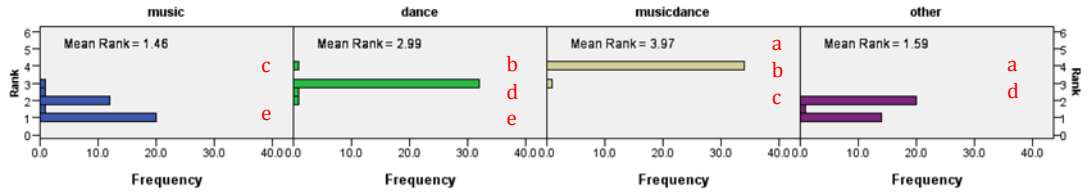
Figure 4.7 Related samples Friedman's analysis of variance by ranks of engagement in tasks for autistic children.



Notes. N= 7. Mean ranks of scores from level of spatial proximity/ inclusion for pupils with autism during music, dance, music and dance and other throughout the sessions of the intervention programme. The vertical axis represents the mean rank from the engagement on task scores. The horizontal axis represents the number of children with autism participating in the intervention programme. a, b and c refer to the paired significant results.

For the neurotypical peers, results presented in Figure 4.8 show that the level of physical proximity and inclusion to the groups changed according to the task they were undertaking, χ^2 (3)= 91.34, p< .001. Pairwise comparisons showed five significant results. Post hoc Wilcoxon tests were run and showed that non autistic participants were more included in the group during music and dance as opposed to all three tasks: other, T=630.00 z=5.1, p< .001, with a large effect size r=.86, dance: T=629.00, z= 5.14, p< .001, with a large effect size r= .87, music T=0, z= -5.16, p< .001, with a large effect size r= -.87. Neurotypical pupils were also more included during dance as compared to other, T= 630, z= 5.16, p< .001, large effect size r= .87 and as compared to music T= 627.00, z= 5.16, p< .001, large effect size r= .87. Their scores of physical proximity/ inclusion during music and other were similar.

Figure 4.8 Related samples Friedman's analysis of variance by ranks of engagement in tasks for neurotypical children



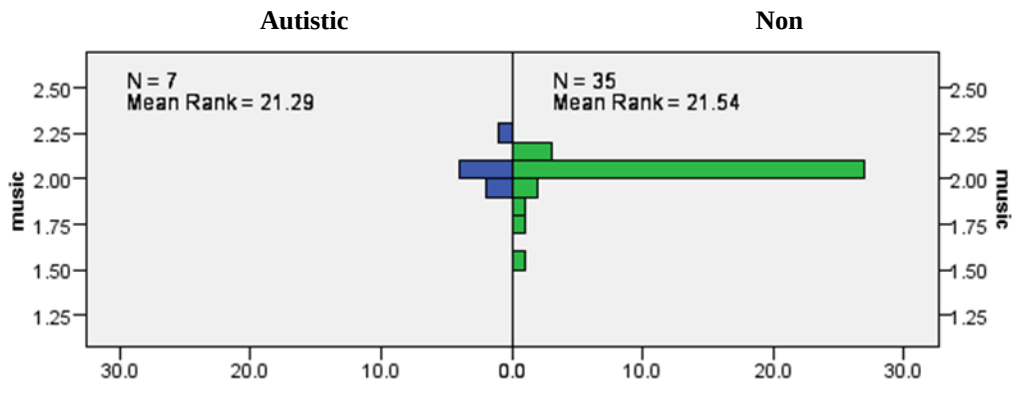
Notes. N= 7. Mean ranks of scores from level of spatial proximity/ inclusion for pupils with autism during music, dance, music and dance and other throughout the sessions of the intervention programme. The vertical axis represents the mean rank from the engagement on task scores. The horizontal axis represents the number of children with autism participating in the intervention programme. a, b, c, d and e refer to the paired significant results.

4.2.2 By task and ASC/Neurotypical peers

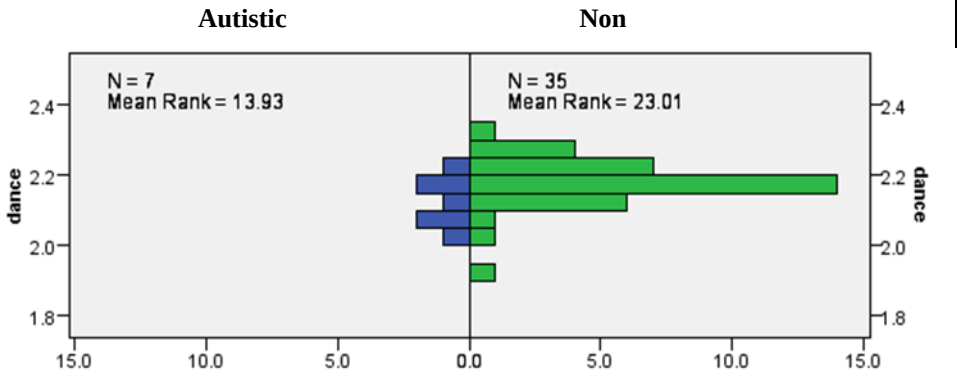
In order to see whether there was any difference in the levels of inclusion to the group between children with autism and their neurotypical peers according to the four tasks and compare these differences, further tests were needed. Mann Whitney test was used to evaluate these differences in engagement between the autistic pupils and the neurotypical participants according to the task involved. As the data was skewed the most appropriate statistical test was Mann-Whitney U. The level of physical proximity/contact according to whether the children were autistic or non-autistic was significant for two of the four tasks ($p<.10$). Results are shown in Figure 4.9.

For dance, the level of inclusion was marginally different between the autistic children (Mdn=2.14) and their neurotypical peers (Mdn=2.18), U= 175.50, z= 1.79, p= .073, small to medium effect size, r= .28. Similarly, for 'other' the level of inclusion was different between the children with autism (Mdn=1.85) and their non-autistic peers (Mdn=2.00), U= 229.00, z= 3.6, p< .001, medium effect size, r= .55. The level of engagement between children with autism (Mdn= 2.00) and their non-autistic peers (Mdn=2.00) was similar for music. Likewise for music and dance, pupils with autism (Mdn= 2.30) were similarly included to the group as the neurotypical participants (Mdn= 2.30).

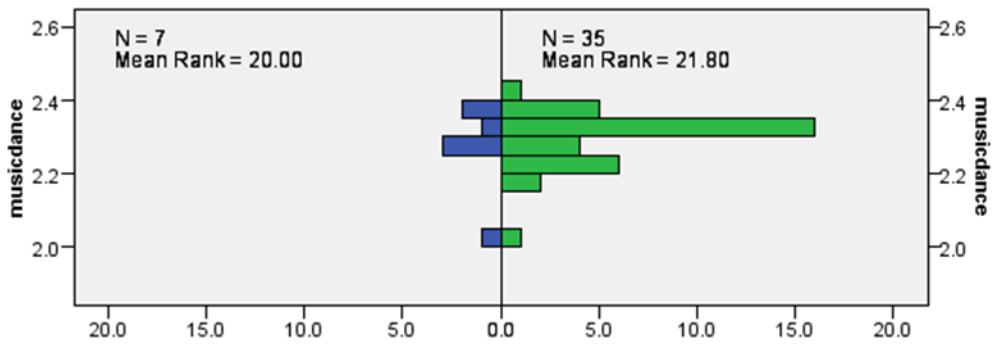
Figure 4.9 Mann Whitney test of inclusion in the group for autistic pupils and their neurotypical peers



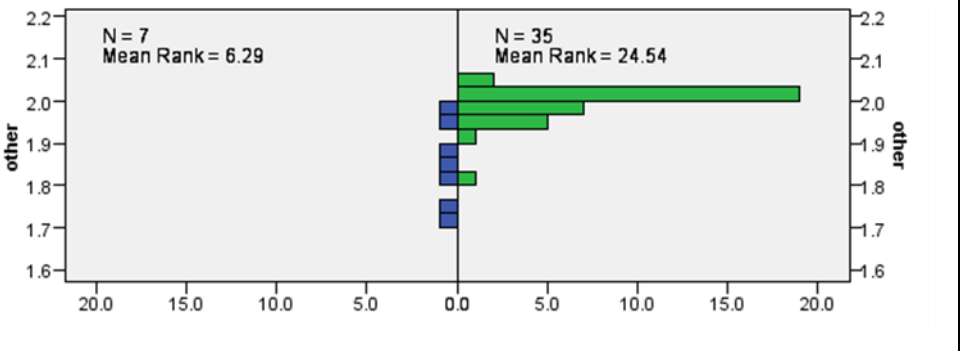
1 NS



2*



3 NS



4 ***

Notes. N=7 autistic pupils, N=35 neurotypical pupils. The horizontal axis represents the number of participants and the vertical axis represents the rank comparison between autistic and non-autistic participants. Asterisks indicate statistical significance at the 10% (*), 5%(**) and 1%(***) level.

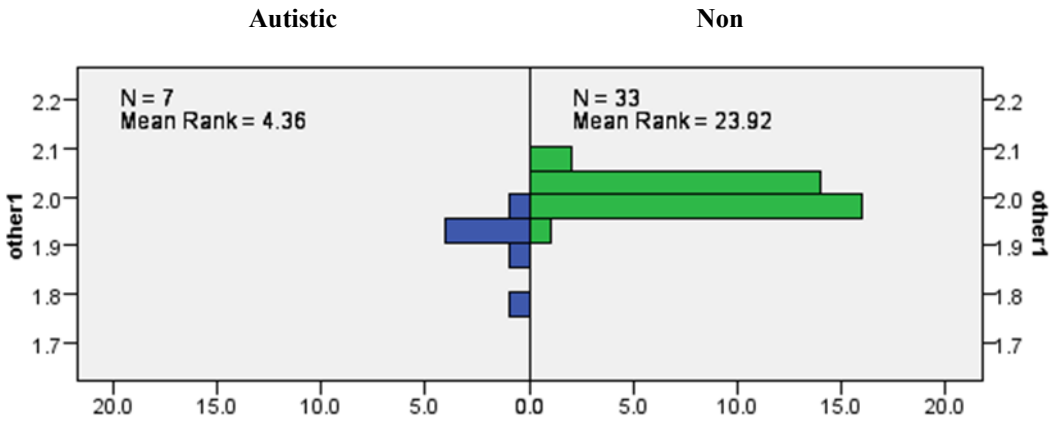
1. Mean ranks of scores of inclusion of pupils with autism and their peers during music throughout the programme.
2. Mean ranks of scores of inclusion of pupils with autism and their peers during dance throughout the programme.
3. Mean ranks of scores of inclusion of pupils with autism and their peers during music and dance throughout the programme.
4. Mean ranks of scores of inclusion of pupils with autism and their peers during other throughout the programme

4.2.3 By task and session ASC/N

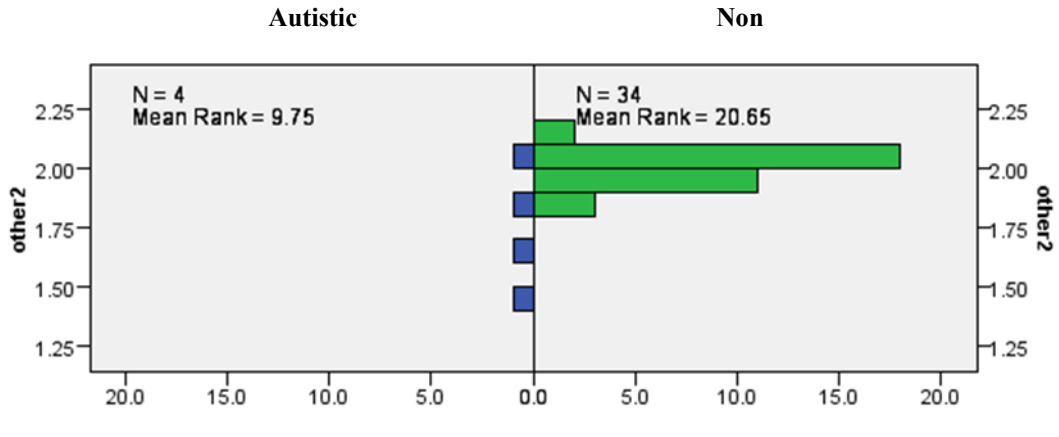
Further analyses involved evaluating whether there were any differences in the levels of proximity/physical contact according to the task the children were taking part in, the session of the programme and whether they were autistic or not. Mann-Whitney tests were run and produced the following results, shown in Figure 4.10.

For 'other', the level of inclusion and spatial proximity was significantly different for all the sessions ($p<.10$). In particular, for session 1 participants with autism were significantly less included or in physical contact compared to their neurotypical peers, $U= 228.50$, $z= 4.09$, $p< .001$, with large effect size $r= .63$. Similarly, for session 2 ($U= 107.00$, $z=1.86$, $p= .066$, medium effect size, $r= .29$) and 3 ($U= 192.00$, $z=2.75$, $p= .005$, medium effect size, $r= .42$) during 'other' there were differences in the degree of inclusion between the autistic children and their peers. For sessions 4,5 and 6 autistic pupils were less included or in contact with others compared to their neurotypical peers during other activities (session 4: $U= 147.50$, $z= 2.65$, $p= .006$, medium effect size, $r= .41$; session 5: $U= 142.00$, $z= 2.83$, $p= .004$, medium effect size, $r= .44$; session 6: $U= 129.50$, $z= 2.15$, $p= .04$, medium effect size $r= .33$)

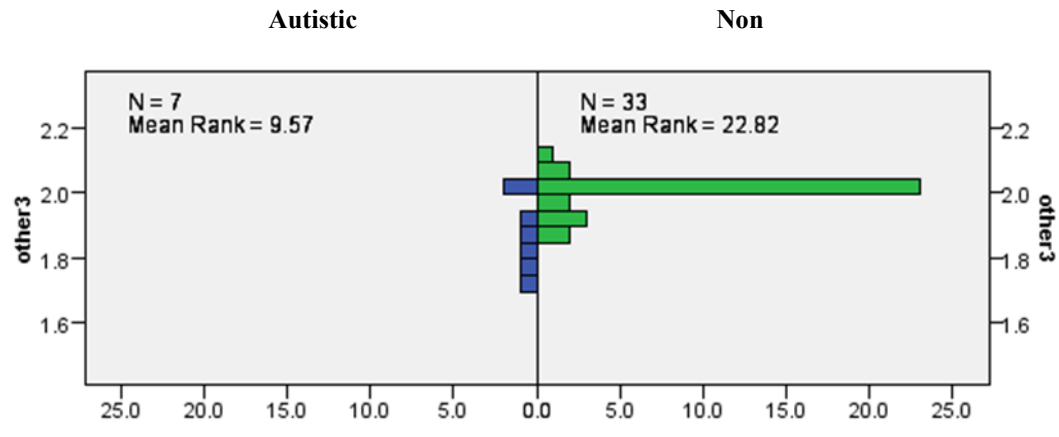
Figure 4.10 Mann Whitney test of inclusion in the group for autistic pupils and their neurotypical peers during other per session.



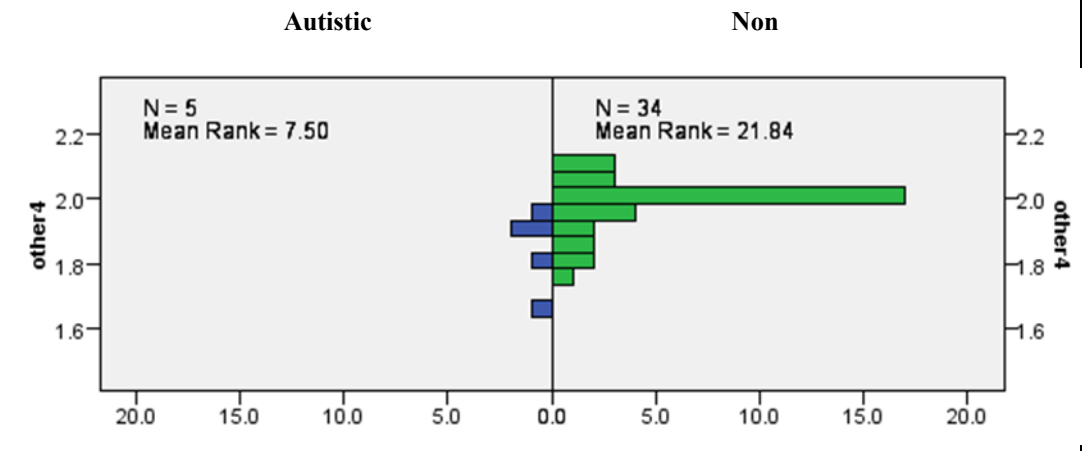
1***



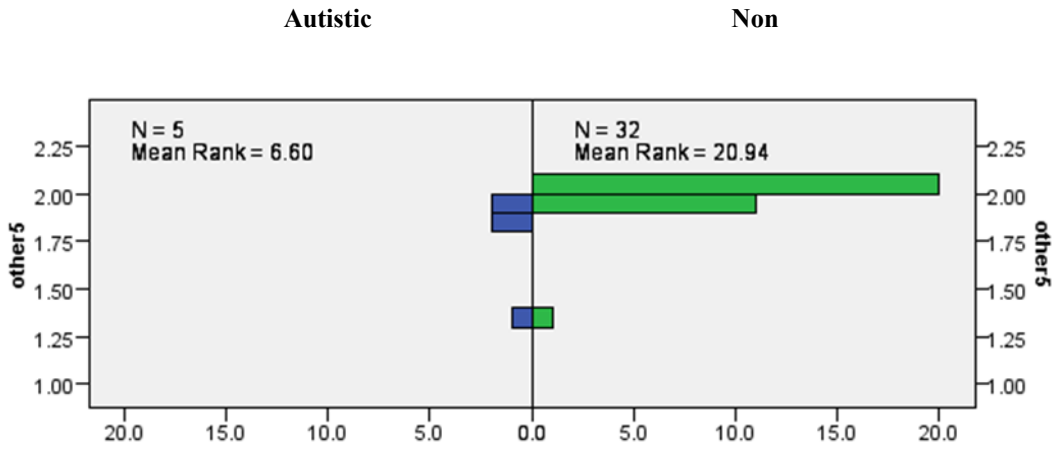
2**



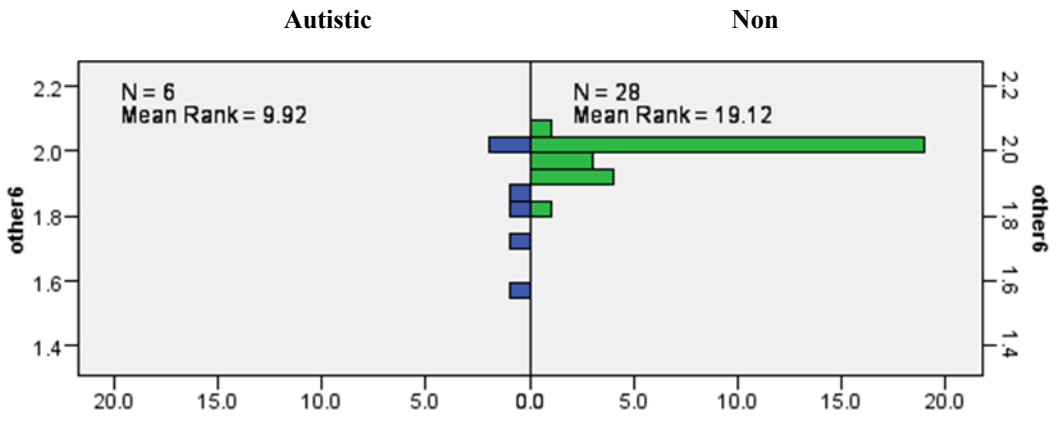
3**


Autistic
Non
N = 5
Mean Rank = 7.50
N = 34
Mean Rank = 21.84
other4
2.2
2.0
1.8
1.6
20.0
15.0
10.0
5.0
0.0

4**


Autistic
Non
N = 5
Mean Rank = 6.60
N = 32
Mean Rank = 20.94
other5
2.25
2.00
1.75
1.50
1.25
1.00
20.0
15.0
10.0
5.0
0.0

5**

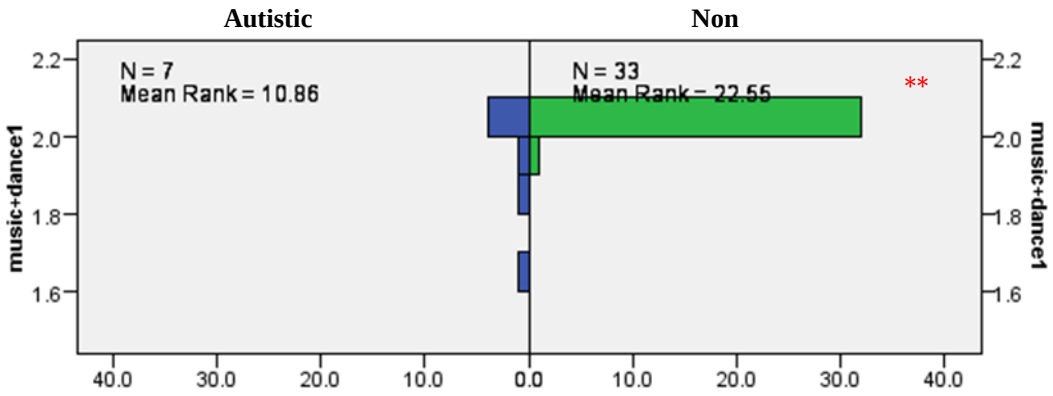

Autistic
Non
N = 6
Mean Rank = 9.92
N = 28
Mean Rank = 19.12
other6
2.2
2.0
1.8
1.6
1.4
20.0
15.0
10.0
5.0
0.0

6**

Notes. N=7 autistic pupils, N=35 neurotypical pupils. The horizontal axis represents the number of participants and the vertical axis represents the rank comparison between autistic and non-autistic participants. Asterisks indicate statistical significance at the 10% (*), 5 %(**) and 1 %(***) level.
1. Mean ranks of scores of inclusion of pupils with autism and their peers during other in session 1
2. Mean ranks of scores of inclusion of pupils with autism and their peers during other in session 2
3. Mean ranks of scores of inclusion of pupils with autism and their peers during other in session 3.
4. Mean ranks of scores of inclusion of pupils with autism and their peers during other in session 4.
5. Mean ranks of scores of inclusion of pupils with autism and their peers during other in session 5.
6. Mean ranks of scores of inclusion of pupils with autism and their peers during other in session 6.

For music and dance, the level of physical contact/ inclusion between children with autism and their peers was significantly different only during session 1 (U= 183.00, z= 2.82, p= .02, with medium effect size r= .043), as presented in Figure 4.11. In all other sessions, all participants were similarly included in the group and in close proximity/contact with their peers.

Figure 4.11 Mann Whitney test of inclusion in the group for autistic pupils and their neurotypical peers during music and dance in session one.



Notes. N=7 autistic pupils, N=35 neurotypical pupils. The horizontal axis represents the number of participants and the vertical axis represents the rank comparison between autistic and non-autistic participants. Asterisks indicate statistical significance at the 10% (*), 5 %(**) and 1 %(***) level.

For dance, the Mann Whitney test revealed no significant results; therefore, children with autism were similarly included in the group and in close proximity/contact as their neurotypical results in all of the sessions. Similarly, for music, throughout all the sessions, all pupils had similar scores.

4.2.4 Summary of results for physical proximity/inclusion

Non-parametric tests were run in order to evaluate the level of physical proximity/inclusion in the group of all participants during the different tasks throughout the intervention programme. I compared the levels of inclusion of autistic and neurotypical peers during the four tasks (music, dance, music and dance, other) and across the different sessions. Results showed that autistic pupils were more engaged during music and dance, as well as during dance on its own especially in relation to 'other'. Neurotypical peers were also more engaged during dance and music and dance in relation to music or other. In sum, when the task involves dance, physical proximity/inclusion is enhanced. Interestingly, children with autism were equally included during music and dance and music but there was a difference in the inclusion scores during dance and other activities. When looking at the comparisons between each task and session, I found that all participants were similarly included during all music and dance lessons and during all music and dance lessons, apart from the first session. On the other hand, during 'other' autistic pupils were less included in the group as opposed to their peers.

Table 4.3 Physical proximity/ Inclusion

Question- Test	**Result**	**Significance**	**Note**
Physical proximity/inclusion during all tasks (music, dance etc.) for autistic pupils Friedman's ANOVA-Wilcoxon signed rank	Change of level of inclusion in the group according to task involved	Significant difference between • Music and dance-other • Dance-other • Music and dance-music	Effects sizes are large *When task involves dance physical proximity/contact is higher*
Physical proximity/inclusion	Change of level of	Significant difference between	Effects sizes are large

during all tasks during all tasks (music, dance etc.) for neurotypical pupils Friedman's ANOVA-Wilcoxon signed rank	inclusion in the group according to task involved	• Music and Dance-other • Music and dance-music • Music and dance-dance • Dance-other • Dance-music	*When task involves dance physical proximity/contact is higher*
Comparison of inclusion in group between autistic and non-autistic pupils in all four tasks	Change of level of inclusion according to task involved	Significant difference between pupils during • Dance • Other	*Similar inclusion levels during music and music and dance*
Comparison of inclusion in the group between autistic pupils and their neurotypical peers during MUSIC per session	No difference in the level of inclusion for pupils with autism and their peers	None of the comparisons were significant (no music in session 2)	*All participants were equally included during music in all the sessions*
Comparison of inclusion between autistic pupils and their neurotypical peers during DANCE per session	No difference in the level of inclusion for pupils with autism and their peers	None of the comparisons were significant.	*All participants were equally included during dance in all the sessions*
Comparison of inclusion between autistic pupils and their neurotypical peers during MUSIC AND DANCE per session	Difference in the level of inclusion between pupils with autism and their peers in one out of six sessions.	Levels of inclusion was different during • Music and Dance 1	*Similar results for all other sessions.*
Comparison of inclusion between autistic pupils and their neurotypical peers during OTHER per session	Difference in the level of engagement between pupils with autism and their peers in all sessions.	Level of engagement was different during 'other' in all six sessions.	Effect sizes are large in session 1 and medium in all other sessions.

4.3 Summary of findings

Non parametric tests in SPSS produced the following key results.

Friedman's ANOVA showed that:

For autistic children, the level of engagement changed according to the task in which they were taking part. Participants with autism were significantly more engaged during music, followed by music and dance in relation to other.

For the neurotypical peers, the level of engagement also changed according to the task they were undertaking and they were most engaged during music and dance followed by music and less during other.

With regard to inclusion, similarly scores changed according to the task involved for all participants but in this variable …

All participants, autistic and non-autistic, were more included during music and dance followed by dance. However, for pupils with autism, inclusion scores during other were significantly lower. This was not so much the case for neurotypical peers.

Mann Whitney tests allowed comparison between autistic and non-autistic participants according to task and session. These tests showed that:

Music was the only task in which children with autism had similar engagement levels in all sessions in comparison to their peers. During dance, only in session five were they similarly engaged, and during music and dance in sessions 2, 3 and 5. During other autistic children were less in all the sessions of the programme.

Similarly, as far as inclusion is concerned:

Pupils with autism were less included during other in comparison to their peers and equally included during music and music dance in all sessions. Music and dance session 1 was the only session during which autistic pupils were less engaged then their peers. In dance, analysis per session showed similar scores for all sessions.

4.4 Conclusion

This chapter presented the findings of the quantitative analysis, which confirms the hypotheses of the study showing that music can enhance engagement for pupils with autism, and dance, combined with music promotes physical proximity and inclusion. Other tasks, which involve the story, language tasks and all other transitions, were found to be the tasks during which pupils with autism were least engaged and included in their group of peers. Chapter 5 further supports these findings by presenting the results from the mixed data; monkey task, repetition of task and checklist observation analysis. Chapters 6 and 7, which include the two detailed case studies follow the main findings from the quantitative and other data analysis with the emphasis on why and how music and dance promote engagement and inclusion.

Chapter 5 Mixed Data Results

The previous chapter provided the quantitative analysis of the data, deriving from the structured observations of the sessions of the intervention programme, which produced statistically significant results. The main findings were that music promoted engagement on task for pupils with autism and in conjunction with dance enhanced physical contact and inclusion of the pupils in their group of peers. This chapter presents a range of mixed data and their main findings mainly around engagement and inclusion. The first section describes the monkey task, which was an innovative and useful tool in looking at inclusion and acceptance of pupils with autism by their peers. It is followed by the repetition of task procedure, which examined whether pupils were able to remember the main task performed in the previous session and what cue helped them remember. Finally, I present the analysis of the observation checklists completed by the teachers for the pupils with autism before and after the intervention to look at the differences and benefits of the programme.

5.1 Monkey task

In the story of the intervention programme, there are six main characters, the same number as the participants. Out of the six characters, two were described to the children: the lion and the monkey. The lion is the strong one, leader of the team, who was popular and had a lot of friends and the monkey. The monkey was presented as shy, lonely, without many friends and insecure to go through the adventure alone. As the story unveiled, the monkey turned out to be invaluable in the team and all his animal friends were surprised by his skills and became his caring companions.

At the first session, the participants were asked to choose which animal character they would like to be during the programme. At the last session, I asked them whether they would choose the same or a different animal if we had the chance to repeat our sessions. I also asked them to choose one classmate who helped the most to pass the adventures, who was the most helpful.

The table below summarises the findings from all the groups. N and A define whether the monkey was the character selected by or for the neurotypical or autistic child and further down whether it was one person's or a group decision. We can also see whether a choice was made accurately based on the characteristics of the animal or if the group made a decision without taking into account those features. Finally, some more details for each group are shown in the last section of the table where important elements are highlighted with a different colour.

As we can see in the table below, most of the groups understood the task and chose characters according to the description given. Only two out of seven made a random choice based on different reasons: appearance of the props or likeness of specific animals. In three of the groups, the monkey was given to the participant with autism and in one case only it was a joint decision made by the group and the autistic child. This was the case for Rosie (R) in SG school, a non-verbal girl with autism and older in her age group. Even though the monkey was given to three autistic children, in a fourth group the child with autism wanted the monkey but the group decided otherwise. In two other groups, nobody wanted to be the monkey.

At the last session of the intervention, only Rosie would be the monkey again, but was voted as the most helpful during the sessions by her peers. Similarly, in the

other group ‘H’ the boy who initially wanted the monkey was also voted as most helpful. Four groups would choose the same animals. In two other groups, few children wanted to be the giraffe, the animal picked by the children with autism. Finally, two children with autism, in session 6 stated that they would like to be the lion if we repeated the programme.

Table 5.1. Monkey task analysis

Group	**B**		**SG**		**H**		**MR**		**MH**		**O**		**MJ**	
Session	1	6	1	6	1	6	1	6	1	6	1	6	1	6
Child	N	N	A	A	N	N	N	N	A	N	N	N	A	N
Choice by animal character features	✓		✓		✓		✖		✓		✖		✓	
Whose choice	N		N&A		N		N&A		N		N&A		N	
Description	**Session 1:** Understood the task, did not give the monkey to L, who wanted the penguin **Session 6:** They would choose the same animal if repeated		**Session 1:** R, the girl with autism herself chose the monkey which was also the group's decision **Session 6**: They have realized and clearly explained that		**Session 1**: G the boy with autism picked the monkey. The group decides to give the monkey to the shyest girl. Session 6: Most helpful task: they give		**Session 1**: Nobody wants to be the monkey. **Session 6**: they would not give the monkey to anyone else but they all want the giraffe, the animal chosen		**Session 1:** give monkey to the one who has not got many friends **Session 2**: give the monkey to J, the boy with ASC **Session 6**:		**Session 1**: Nobody wanted to be the monkey. I, girl with autism chose the giraffe. **Session 6**: 2 girls		**Session 1**: Give the monkey to a boy who seems rather shy and introvert **Session 6**: They would choose the same	

	programme.	the monkey who had the least friends now is the most helpful	2 votes to G and 2 votes to K(took initiative)	by R, the boy with ASC	J wants to be the lion.	would like to be the giraffe; I, would like to be the lion, leader of the group	animals.

Notes: N and A indicate whether the monkey was chosen/given to child with Autism or Neurotypical. The text in blue font highlights interesting elements around the choice of characters.

5.2. Repetition of task

Table 5.2. Repetition of task

Group/ Session	B			SG			H			MR			MJ			O			MH		
2	N/A	0	?	✓	0	P	N/A	0	?	N/A	0	?	N/A	0	?	✓	0	P?	✓	0	P?
3	✓	1	P?	✓	0	?	✓	1	M	✓	1	L	✓	0	P/M?	✓	0	P?	✓	1	P?
4	✓	2	M/L	✓	0	?	✓	2	M/L	✓	2	L/M	✓	1	M	✓	1	M	✓	1	M
5	✓	0	M/P	✓	0	P	✓	2	M/L	✓	3	L/P	✓	0	M/P	✓×	2	P	✓	0	P
6	✓	0	M	✓	2	M	✓	1	M	×	2	L/M	✓	1	M	✓	0	M	✓	0	M

✓= remembered task- equally well or better performance of task ×= did NOT remember- not well executed N/A= not demonstrated but verbally described	0= no adult prompting 1= minimal adult prompting 2= some adult prompting 3= lots of adult prompting	Cues for memory M= music L= language P=props ? = unsure of cue

5.2. Repetition of task

Throughout the intervention programme, a main task was performed in each session that involves music and/or dance and relates to the plot of the story. The children are asked to perform the task the following week. The aim is to see whether they remember the task and whether music, dance or the story itself helps them to remember it. The purpose is to give as minimum prompting as possible. Annotations used in the table are specified at the bottom. Again, all groups are analysed in this summative way.

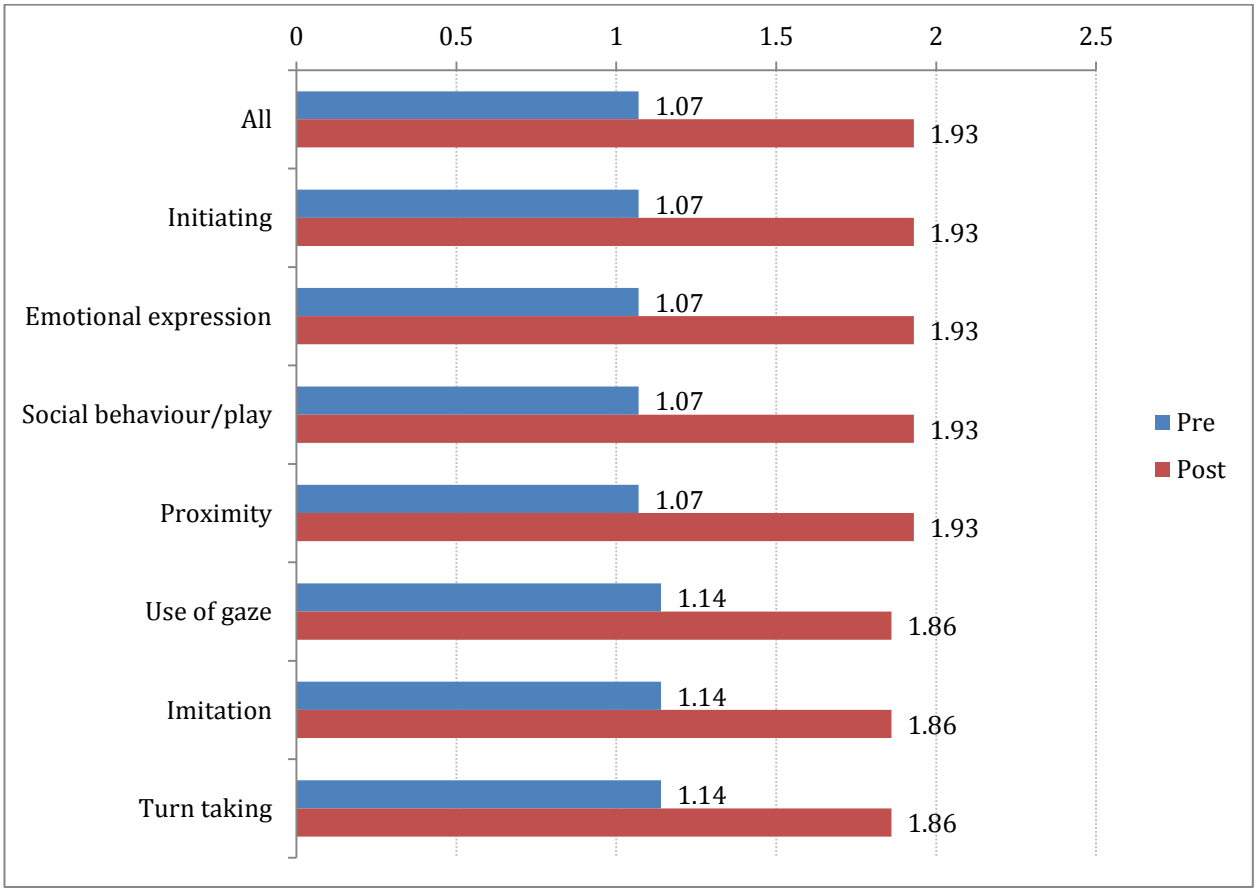
The information shown in table 5.2 indicates that the children remembered the main music/dance task that they did the previous week and were able to discuss about it, demonstrate it and actively participate. Overall, little prompting was required and sometimes I gave them some verbal cues referring to parts of the story or the structure of the task itself. This was particularly the case for the music and dance tasks during which there was a taught series of steps. The verbal assistance I provided was as follows: ‘do you remember how we crossed the lake?’ ‘Did we start in a circle or in pairs?’, ‘how many steps do we start with?’ The children with autism remembered and performed the task equally well as their peers and in some occasions they all did it even better than during the previous session. The repetition of a routine, task or activity can be particularly helpful for learning and engagement. As we can also notice in the table above music (18) was the cue that really helped the children remember the task as opposed to seeing the props (12) and verbal prompts (7).

5.3 Observation checklist analysis

As also described in chapter 3, an observation checklist was given to all teachers to complete for the pupils with autism who participated in the study. This was done before and after the intervention programme in order to examine potential changes in the behaviours and skills of the pupils. All teachers completed the checklists independently but I provided some verbal clarifications on the different categories and scorings. The observation profile was in line with the standardised assessment tools used to record children's progress. It was designed based mainly on the assessment provided in 'Autism in the Early Years' (Cumine et al., 2000) combined with some elements from the developmental screening test 'Schedule of Growing Skills' (Bellman and Cash, 1987). Each teacher rated a range of observed behaviours of social interaction, which were divided, in the following categories: spontaneous use of gaze, spontaneous maintenance of proximity, imitation, turn taking, initiating, emotional expression and understanding and social behaviour and play. Under each category there were 4-8 behaviours that the teacher had to rate using the following key: N= not present, I=indifferent, D= developing, F=fluent. The ratings were inserted into SPSS for every child and tests were run in order to determine whether there was a difference pre and post the intervention programme. Firstly, Friedman's test was run for the whole of the pre and post ratings. Results showed that there was a significant difference in scores before and after the programme, χ^2 (1) =6.00, p= .01. Wilcoxon post hoc tests showed that overall pupils improved in all areas T= 21, p= .03, with a very large effect size r= .83. Mean rank for pre-test was 1.07 and post-test was 1.93. Friedman's test was then run for each of the seven categories pre and post-tests to identify improvements in specific areas. Significant differences were found in all categories

with pupils showing an improvement after taking part in the intervention programme. As shown in Figure 5.1 below, there are two main sets of results. The first where χ^2 (1) =5.00, p= .025 with pre-test mean rank being 1.14 and post-test 1.86. Post hoc Wilcoxon showed that in these categories pupils rated higher T= 15, p= .04 with large effect size r= .77. Then, there were categories with higher difference and significance i.e. χ^2 (1) =6.00, p= .014. Mean ranks for pre-test was 1.07 and post-test 1.93. Wilcoxon post hoc tests revealed that pupils improved in all areas T= 21, p= .03, with a very large effect size r= .83 Results showed that the intervention programme had a positive impact on all categories around social and emotional understanding and expression for pupils on autism spectrum.

Figure 5.1. Mean ranks of scores before and after the intervention for pupils with autism in the different categories of the observation checklist.



Notes: N=7. Pre and post test scores for the various categories of behaviours. Differences of scores presented in sets by category for pupils with autism.

5.4 Conclusion

Chapter 5 presented the main findings from the mixed data tools, which confirmed that the intervention programme had a positive impact on the social skills of children with autism and their inclusion in the group. The monkey task showed that pupils have been accepted by their peers and were not always perceived as the ones not having many friends. It was also interesting to see that pupils with autism were voted by their peers as being the most helpful and the peers wanting to be the animals chosen by the children on the autism spectrum. With regard to repetition of task, the main finding was that pupils remembered the task learnt the previous week each time and were able to perform it equally well or better with no or little prompting. Music was predominately the cue that helped participants remember and perform the task. This finding further supports the results from the quantitative analysis, reported in chapter 4, which showed that music was a motivational factor for autistic pupils, promoting engagement on task and inclusion in the group.

The next two chapters will further examine in detail the findings of the qualitative and mixed data by exploring the different parameters affecting engagement on task and inclusion by the means of two extensive case studies.

Chapter 6 Case Study I

6.1 Introduction

Two detailed case studies form the body of the qualitative analysis of data, which are presented in chapters six and seven. I chose these two groups to analyse as case studies as they were the first to take part in the research project and because the autistic participants in these two groups represent different samples of the participants of the study. The first consists of Year1 pupils and the child with ASC is a boy and verbal whereas the second group consists of Year 3 children and the ASC participant is a non-verbal girl.

Each case study is divided in the following sections:

A. School and group background:

This section contains general facts about the school and its inclusion policy and practice. It also provides information on the participants and the intervention sessions in relation to the location, adult support, problems/difficulties and factors that may have impacted on the effectiveness of the programme. Finally, this section describes the child with autism participating in the group with regard to his/her strengths and areas of difficulty.

B. Observation profile and behaviour checklist completed by the teacher pre and post intervention

This section gives us a more detailed picture of the participant with autism based on the observation checklist completed by the teacher before and after the intervention programme. It also gives some information on the specific checklist used and concludes with a table which shows the behaviours in which the

participant has demonstrated progress throughout the programme according to his teacher, including some evidence from the observation of the sessions as well.

C. Feedback from adult

In this section, any comments or feedback from the adults supporting the child with autism are presented.

D. Analysis of each intervention session

This section forms the main body of the case study chapters and consists of the following subsections:

1. On/off task charts for autistic and non-autistic participants followed by detailed table with the main behaviours observed in pupils, in relation to their engagement on task, and the interpretations of those.

2. Included/ excluded charts for autistic and non-autistic participants followed by detailed table with main behaviours with regard to the pupils' inclusion in the group and interpretations given for these behaviours.

3. Summary of findings per session and in relation to the literature.

E. Summary of findings from all the sessions of the intervention.

The chapters conclude with a summary of findings from all the sessions of the intervention programme which are categorised into generic ones relating to autism and inclusion and the ones around music and dance.

6.2. Background school/group

The school, according to its policy documents, which are available in the school's website, is firmly committed to the principle of inclusion and of maximum

participation in all activities in the school and community. The SEN policy has been developed in accordance with the 200l Code of Practice (DfES, 2001) and the Single Equality Scheme of 2008 (DCSF, 2008). The aim is to provide to all children the opportunities that will enable them to develop their skills and abilities. The school has appointed an Inclusion Coordinator and works in collaboration with a specialist school, catering for pupils with physical and intellectual disabilities in the same borough. Hence, the school receives the specific expertise and training that will enable the members of staff to promote the full inclusion of all students. The present study was conducted in 2010.

The group selected to participate in the research programme was from a Year 1 (aged 5–6) class and consisted of 3 boys (one with ASC) and 3 girls. The intervention programme took place on Thursdays in the afternoon after lunch and break, when the rest of the class had their PE session. The main location used was the classroom and twice the school's main hall. This caused a few disruptions in terms of space and equipment as well as confusion for the children. No other member of staff, other than me, was present during the intervention programme and the sessions were run according to schedule for six consecutive weeks on the same day and time. The fact that the sessions were run at this time of the week and day may have impacted negatively on the programme since the children seemed relatively tired. Also, the death of one of their classmates with severe medical needs had significantly impacted on their mood, attitude and energy levels during the first few weeks.

Lawrence was the child with ASC who participated in the intervention programme. The boy was fully included in the classroom and had a 1-1 learning support assistant in the core subjects of the curriculum. According to the observational

profile completed by his teacher, Lawrence had generally responded well to the structure of Y1 and had accepted the class routine, although he struggled when routine was changed and found it difficult in the morning to leave his mother. Lawrence required continuous adult support to complete nearly all activities throughout the day. During the time that the programme started he was beginning to imitate social behaviour and talk about his friends in the classroom. Lawrence is at the higher end of the spectrum, functioning at a higher cognitive level and presenting the difficulties associated with autism with less severity. He is able to use functional language and words in context as well as to follow basic instructions.

6.3 Observation profile/ behaviours checklist

6.3.1 Pre-intervention

The class teacher was asked to complete the observation checklist, designed based mainly on the assessment provided in 'Autism in the Early Years' (Cumine et al., 2000) combined with some elements from the developmental screening test 'Schedule of Growing Skills' (Bellman and Cash, 1987). The teacher rated the observed behaviours of social interaction, which were divided in the following categories: spontaneous use of gaze, spontaneous maintenance of proximity, imitation, turn-taking, initiating, emotional expression and understanding and finally social behaviour and play. Under each category there were 4-8 behaviours that the teacher had to rate using the following key: N= not present, I=indifferent, D= developing, F=fluent.

According to the observation checklist completed by Lawrence's teacher at the beginning of the observation programme Lawrence seemed to be developing in a lot of areas of social interaction.

In terms of spontaneous maintenance of proximity his rating was fluent in a few behaviours such as watching other children playing and tolerating their playing alongside as well as intervening in his play. He seemed to be less tolerant to adult's intervention and is now developing his response to friendly handling.

As far as eye gaze is concerned he was beginning to look at the adult talking to him or playing with him but he remained indifferent when he needed to gaze shift or when prompted to repeat action or game in a song as modelled by adult. None of the behaviours in this category was scored as fluent. Lawrence was also struggling in imitation skills even when repetition was given and did not seem to imitate gestures such as waving or clapping even when cues were given. He was able to recognise familiar emotional expressions such as happy, sad or angry but struggled with producing anything but a smile.

Lawrence developed his turn-taking skills in simple play situations with one or more adults or peers as well as in gross motor games; however, those skills were not yet fluent. Although he could anticipate for his turn and accept interaction he did not initiate any bid for interaction. He would not show or offer any object/activity to an adult or peer and did not approach adults when needing help. Lawrence did not initiate simple games with others but would greet familiar adults when told to. He was beginning to show interest in other children's play and show preference for some peers in the class. He rarely played with other children and he was exploring different objects and toys but would not share them.

6.3.2 Post intervention

Lawrence had made good progress in several areas of the checklist as scored by his teacher but this was also evident from the observed behaviours that he demonstrated throughout the programme. The teacher noted that she was surprised to see these changes even immediately after each individual session of the programme and she was convinced that they were due to the approach. Table 1 below shows the pre and post intervention ratings for some behaviours selected that were marked as 'indifferent' or 'not present' in the initial assessment. It also gives some indicative examples of the behaviours recorded during the open observation process of the videoed sessions, which reflect the areas in which Lawrence had made considerable progress according to the ratings given by his class teacher.

Table 6.1 Observation checklist

Observed behaviours	Pre	Post	Session and description
Follows adult gaze when adult is looking at an object	Indifferent	Fluent	Session 1- *He is looking at me being on task all the time and copies the other children laughing occasionally* Session 2- *Lawrence is waiting with anticipation for me to take the penguin out of the bag.*
Looks at adult to prompt the repeat of an action, game or song	Indifferent	Fluent	Session 2- *he joins the circle when we do the fingers game. He is laughing and tries to copy some moves and sounds.* Session 3- *Lawrence copies with some actions and sounds and laughs when his friends do so. He is participating in this movement game more and more every time.*

Shows/offers object/activity to an adult	Indifferent	Fluent	Session 1- *Lawrence sits next to me and calls me by my name wishing to talk to me about the penguin. He tells me what colours he is picking every time, maintaining eye contact.*
Shows/offers object/activity to a child	Indifferent	Fluent	Session 4- *Lawrence shows the rainmaker to Andrew with enthusiasm and wants to share during the game*
Will spontaneously approach adult when in need of help	Not present	Fluent	Session 2- *He seems quite confused about whom to choose next and as he finds no partner in the next one, I do it with him and touch toes*
Will initiate a simple game with adult	Not present	Fluent	No strong evidence during the sessions but the teacher recorded that after the sessions Lawrence would show the activities to the LSA working with him.
Will initiate a simple game with a child	Indifferent	Fluent	Session 3- *He calls Alicia when is time to find a partner*
Uses sad expression if upset	Indifferent	Fluent	Session 5- *Lawrence uses a sad expression when he asks to go back to class (he seemed upset and tired but when I gave him the option he decided to stay).*
Plays with other children but will not share toys	Indifferent	Fluent	Session 4- *He goes through for the second time and passes the rainmaker to Alicia.*

6.4 Teacher's quotation

The class teacher, although not present in the sessions, was impressed by how Lawrence was so enthusiastic about the intervention and anticipated the sessions each week. She wrote the following on the post intervention checklist:

'Lawrence has recently been making huge developments socially and we are pleased with his progress. Other members of staff have commented that a year ago he would not have worked with another adult the way he has worked with you. All the children have enjoyed working with you and its lovely for them to take part in an enjoyable project with only a few other children'.

It is evident from the observation checklist, the teacher's note as well as from the evidence presented in the following sections that Lawrence benefitted from the intervention in terms of his socialisation and motivation on a task.

6.5 Intervention sessions

This section is divided in the six sessions of the intervention programme and aims to look into more detail at how the children performed in each task with specific emphasis on the engagement on task and the variable of proximity/inclusion.

As explained in chapter 3 in order to record whether students were on task or off task, each session was divided in 10" periods and the main behaviour was coded for each child. The same procedure was followed for the second variable, spatial proximity. In this category there were three ratings: excluded (distance from group), included (close to group/peer) and in contact (physical contact).

A different column marked the task (music, dance, music and dance, other). The same was done for the spatial proximity variable to evaluate the spatial position of the children in relation to the group and the level of contact with peers. All data were inserted into Excel and then the mean was calculated sorting the data according to 'task'.

The charts produced by the quantitative analysis of the structured observations show the scores of the child with autism by task. The tables illustrate the dominant

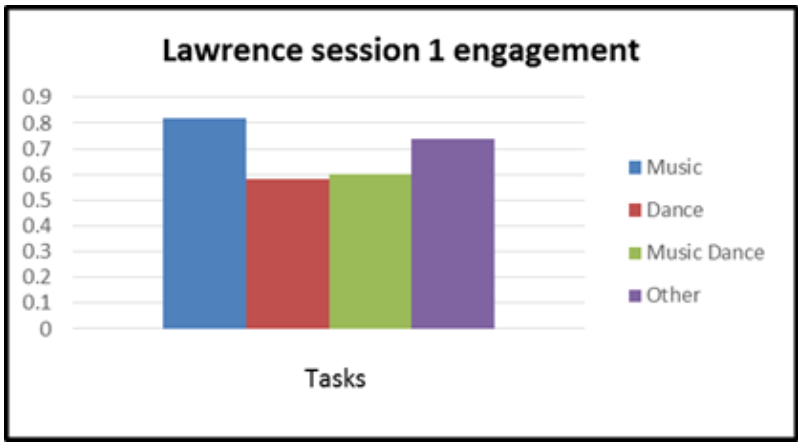
behaviours during the tasks throughout the session in order to explain what was happening and why the child on the ASC was on/off task and included/excluded.

Finally, it seems valuable to see how the non-autistic participants performed throughout the intervention in each session and draw the comparison between them and the autistic child. As previously mentioned the group consisted of 3 girls and 3 boys (including Lawrence, the boy on the autism spectrum). In the tables below, children 1,2 and 4 are girls and 3 and 5 are boys.

6.5.1. Session 1

6.5.1.1 Engagement on task/ ASC participant

Figure 6.5.1.1 Lawrence: session 1, Engagement on task

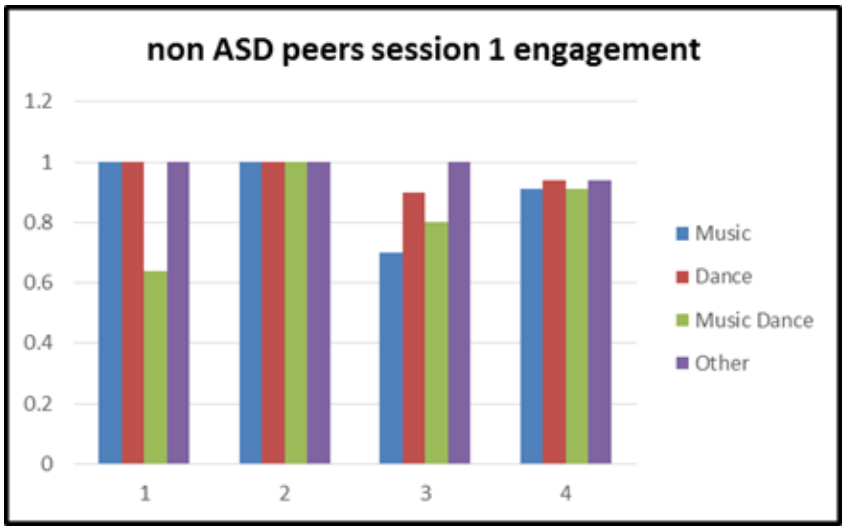


Notes N=1, percentage of engagement on task in session1 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

As we can see in Figure 6.5.1.1, Lawrence was mostly on task throughout the first session but scored slightly higher during the music task and lower when the dance variable was introduced. It seems interesting to see in the table that follows in which exactly dance activities he was off task, what could be the reason for this and how the music element enhances his engagement. Also in what exact activities during the 'other' variable he appears to be focusing more.

6.5.1.2 Engagement on task /Non ASC participants

Figure 6.5.1.2 Neurotypical peers: session 1, Engagement on task



Notes N=4, percentage of engagement on task for the four pupils in session1 during the different tasks. X represents the tasks (music, dance, music and dance, other) for each participant and y the percentage of engagement.

We can see in Figure 6.5.1.2 above that girls achieve the highest scores in music and dance with only one of them scoring the maximum during music and dance. All the girls (1,2,4) are less on task during other activities and the boy (3) scores the maximum during dance and lowest during music. One boy (5) was absent during the first session of the intervention.

It seems that Lawrence, the boy on the autism spectrum, performed equally well as the girls in the class being on task during the music variable but was not as engaged as his peers when dance took place. Interestingly, dance presents the highest scores for all non-autistic participants but this is not the case for music and dance where results vary to a great extent. Finally, in contrary to Lawrence, the neurotypical boy (3) was the least on task during the music variable.

The table that follows presents the dominant behaviours of the participants relating to being engaged on task as recorded during the open observation process of the videoed session. The first columns give the approximate timeline of the session followed by the task and the exact activity taking place. The next two show whether the child with ASC was on, off task or both during that time by describing the actions and behaviour during the particular times frames. Another column shows the behaviour of the non-ASC participants and finally my interpretations of why the children might have been on or off task and what parameters may have influenced this.

SESSION 1- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
10''-2'	**Dance** fingers movement game	Lawrence is sitting nicely in the circle during the movement game with the fingers. He is looking at me being on task all the time and copies the other children laughing occasionally.	He does not copy with movements; he goes off task for a few seconds but repeats with vocalisations (*bop, close the door*).	Children are engaged and try to join in by copying actions and words.	*Both on and off task could be due to the fact that is a new activity difficult to copy unless seen previously- repetition is vital for children with ASC*
2'-5'	**Other** Story narration and questions	During the story, his attention flits but he is still on task. When the other children are trying to open the box, he does not actively join but he is still interested. He is approaching the group, copies his peers but does not talk at all.		The other children join in with actions and by suggesting parts of the story and by asking questions.	*Lawrence may be finding verbal language difficult to follow*
5'-6'50''	**Other** Story Presenting the props	He joins in by naming the animals when I take them out of the bag*	He starts to lose interest in the story and is missing the cues that may be humorous as well as the jokes that his peers make.	Children are all participating actively, talk, laugh and make jokes about the different animals	*Lawrence is again on task when props are introduced and he has a more visual and tactile stimulus- difficult to capture use of language*

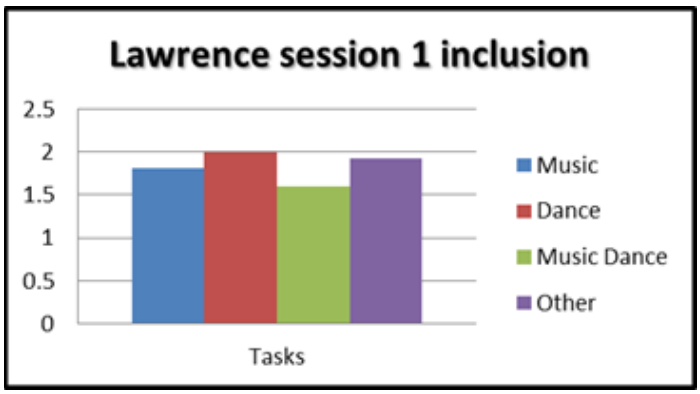
SESSION 1- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
7'-10'30''	**Other** Story Monkey task	While describing the monkey task he is off task but as soon as the other children start to pick the animal characters he engages. Lawrence says he wants to be the penguin. Now the children are exploring the different props relating to the story and chat and laugh between them. Lawrence does not take part in the conversation.		The children want to choose their favourite character, they call out. They chat about the different animals, and play with the stuffed toys.	*Seems not to be able to understand verbal instructions of task but joins in by copying peers when sees the actions*
11'-24''	**Other** Colouring masks	During the mask colouring activity, we move in a different area of the classroom and we all sit around a table. Lawrence sits next to me and calls me by my name wishing to talk to me about the penguin. He seems very excited but calm, also in comparison to his peers. He remains on task and quiet whilst his peers are chatting loudly. He occasionally calls out the colours he wants: *'I want blue'* but does not take part in the conversations. Lawrence is quietly colouring and focused on his task. He tells me what colours he is picking every time, maintaining eye contact.	He becomes quite fidgety and seems to be finding it challenging to sit down.	Everyone is sitting around the table. They remain on task for a long period of time throughout the colouring activity but are chatting loudly.	*Lawrence was on task for most of the colouring activity even if it is difficult to remain sat down and focused for such an extended period of time*

SESSION 1- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
23'-26'	**Other** Transition between activities	Lawrence is the first to leave the table before the end of the activity and goes back to the area where the main intervention takes place and where the props are. He is playing with the monkey toy when a peer joins him and copies him throwing the toys up in the air.		After a few minutes, they all come to this area of the class, they sit down.	*Transition can be challenging for Lawrence and therefore may require more prompting and support to re-engage.*
26'-27'	**Other** Story		Lawrence stands up and wanders around the room during the story telling part	They are on task and seem excited and animated when I explain what they need to do during the next task.	*Clearly off task during narration- verbal language without any sensory/visual support*
27'-29'20''	**Dance**	Lawrence is on task pretending to go to sleep although he requires some physical prompting		The children are on task and waiting for music to start according to task	*Everyone is engaged*
29'20''-31'	**Music and Dance**	He copies his peers while I put the music on. He is on task, individually wakes up without my prompting and pretends to be the penguin without any verbal, physical cue nor by copying. Lawrence is the first to perform the task and	After this, he goes slightly off task.	Everyone is doing the movements of the animals and are happy and focused. But they are chatting quite loudly to each other on top of the	*His peers are over-active and talking a lot- they might have distracted Lawrence.*

SESSION 1- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
		dances likes the animal he has chosen.		music.	
31'-33'	**Music**	They all re-engage during quiet time music activity which I use, although unplanned, to help them calm down and unwind. He stays on task for a long period of time		They all re-engage during quiet time music activity which I use, although unplanned, to help them calm down and unwind.	*Music has proved valuable for the group to re-engage and calm down/relax.*
33'-34'30''	**Other** Story and plenary of session		Lawrence goes away when I talk to the group about the cooperation rules and plenary.	They don't want the session to finish. I repeat: *'It's time to go now'* and they keep saying 'No'.	*For once more, Lawrence seems not to understand and respond to complex verbal instructions.*

6.5.1.3 Spatial proximity- inclusion/ ASC participant

Figure 6.5.2.3 Lawrence: session 1, Inclusion

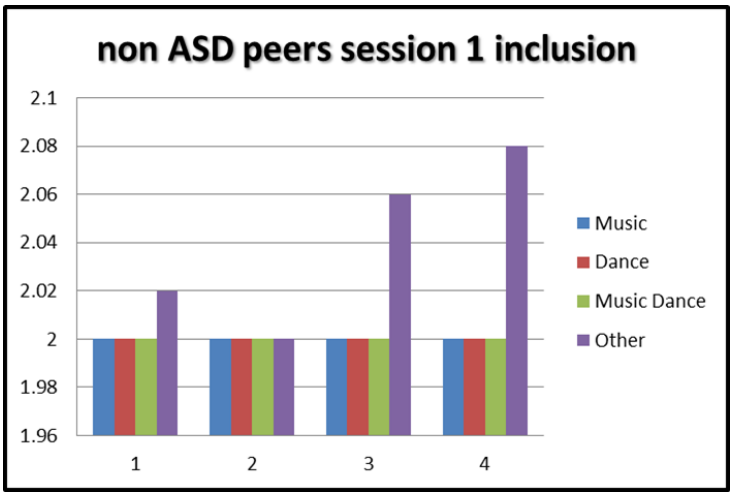


Notes N=1, mean score of level of inclusion in session1 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

As seen previously, during the first session of the intervention programme, Lawrence was more on task during music and less on task when the dance variable was introduced. In contrast, he was more included in the group during the dance task, in which he reached score '2', followed by other activities (see Figure 6.5.2.3). When music was part of the activity he was engaged but slightly away from his group.

6.5.1.4 Spatial proximity- inclusion/ Non ASC participants

Figure 6.5.1.4 Neurotypical peers: session 1, Inclusion



Notes N=4, mean of level of inclusion for the four pupils in session1 during the different tasks. X represents the tasks (music, dance, music and dance, other) for each participant and y the level of inclusion (3= highest score).

As far as the inclusion variable is concerned, 3 out of 4 peers score higher during ‘other’ with only one girl scoring equally in all variables. As we noted above, Lawrence was more included during the dance variable in session 1 with other following straight after. All children score at least ‘2’ in all tasks and some slightly this score by being more included and in contact during ‘other (see Figure 6.5.1.4) The table that follows will allow us to see what factors determined Lawrence’s inclusion to drop during music and him being engaged but ‘excluded’, away from group as well as how dance promoted physical proximity/inclusion during this session for Lawrence, even if he was not focused in dance tasks. Also, we may be able to determine during which exact activities, under ‘other’ the neurotypical peers were more included.

SESSION 1- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
10''-2'	**Dance** fingers movement game	Lawrence is sitting nicely in the circle during the movement game with the fingers. He is part of the group and has joined the circle without any prompting.		The children are all sitting around the circle facing at me and seem interested in task and happy.	*Lawrence seems interested in the dance activity and he is sitting as part of the group throughout. The fact that he was off task for some time but included reinforces the hypothesis that he may require to see a new task at least once before joining in.*
2'-5'	**Other** Story narration and questions	Lawrence is mostly included in the group, he only turns away for a few seconds but soon approaches the group and is even at times 'in contact' with his peers when they all come closer to see the chest and map.		Everyone is still engaged and included in the group. They come really close to each other and are physically in contact when the first props are introduced.	*The props are attracting children's attention and they all work closely and as a group.*

SESSION 1- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
5'-6'50''	**Other** Story Presenting the props	Lawrence is both included in the group, still sitting down in the circle and on task.		Everyone included and engaged.	*Same as above-props-powerful in storytelling*
7'-10'30''	**Other** Story Monkey task	Although he disengages for a while he is still sitting together with his peers for the whole of the monkey task.		The children are playing with the different props.	*Lawrence is still included-could be that props and monkey task provide stimulus and also clearer instructions than following sequence of story.*
11'-24''	**Other** Colouring masks	During the mask colouring activity, we move in a different area of the classroom and we all sit around a table. Lawrence sits next to me and calls me by my name wishing to talk to me about the penguin. He seems very excited but calm, also in comparison to his peers, who are jumping around the room.	Lawrence becomes quite fidgety and moves away. Later out of context says: *'It's not fair'* and Anna repeats his sentence and they all laugh. He tells me what colours he is picking every time, maintaining eye contact but then enters into his own script saying: *'he is a boy'* which also seems to be out of context. His peers ignore him and he repeats the phrase several times.		*Lawrence's peers are unfriendly towards him. They exclude him from conversations, ignore him when he speaks and laugh at him at several occasions making fun of his colouring.*

SESSION 1- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
23'-26'	**Other** Transition between activities	Lawrence is the first to leave the table before the end of the activity and goes back to the area where the main intervention takes place and where the props are. He is playing with the monkey toy when a peer joins him and copies him throwing the toys up in the air.		One boy joins Lawrence who is playing on his own in dance area. After a few minutes, they all come to this area of the class, they sit down.	*He seemed to be finding it challenging to sit down during the previous task or he may have left as he seemed aware of his classmates' behaviour. Peer joins and copies him in his movement free play.*
26'-27'	**Other** Story		Lawrence stands up and wanders around the room during the story telling part	They are on task and seem excited and animated when I explain what they need to do during the next task.	*Moving away and being off task may be due to the fact that he does not understand the story and there are no props, no music or movement.*
27'-29'20''	**Dance**	Lawrence is on task pretending to go to sleep, lying down next to his peers.		Everyone is lying down on the carpet being on task and focused.	*Included and on task during the dance task*
29'20''-31'	**Music and Dance**	He is included in the group and the activity pretending to dance like the penguin for a short period of time. Lawrence is the first to perform the		Everyone is doing the movements of the animals.	*Lawrence is included for most of the activity-then*

SESSION 1- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
		task and dances likes the animal he has chosen. As soon as he performs this task he moves away from the group and the 'dance area'.		They all stay in designated area and close to each other. 'D' comments: *'Nice try'* when Lawrence performs first the dance.	*goes away after performing his dance. Maybe thinks activity is finished? His dance spontaneously appreciated by peer (inclusion)*
31'-33'	**Music**	He is mostly included during the music section of the session sitting next to his peers. Lawrence is standing slightly further for first ½ minute but as soon as he hears the music he joins the group.		They are all sitting down together in the circle relaxing to the music.	*Music helps Lawrence to re-engage and approach the group.*
33'-34'30''	**Other** Story and plenary of session		Lawrence goes away when I talk to the group about the listening and cooperation rules and plenary.	All the other children remain sitting on the floor.	*Story part-moves away-does not follow instructions and excessive language used.*

6.5.1.3 Summary of session 1

During the first session of the intervention Lawrence was mostly on task throughout the activities especially when the music element was dominant during the task. Even when music was not the main activity but was used in the background or to complement the story, he was more engaged. Research has shown that when interactive materials/books or visual supports are used together with music the levels of engagement are increased for individuals with autism (Kern and Aldridge, 2006; Carnahan et al., 2009). Music was also successfully used to re-engage pupils towards the end of the intervention and to help them calm down. Slow music was used and, as found by research, slow music can produce a state for relaxation for both children and adults (Gunter, 1995).

Lawrence was more included in the group during the dance variable, although he was not on task. This can be explained by the fact that the dance task was a new activity and difficult for him to follow although he seemed interested and remained with the group for the whole time. For pupils with autism, repetition and structure is vital for their learning (Mesibov and Shea, 1996). It will be worth noting how Lawrence performs the same task in the following sessions.

Similarly, Lawrence required some physical prompting at different occasions during the intervention. This could be due to the fact that he may not have understood the verbal instructions of what he needed to do. Children with autism can find verbal information difficult to process and struggle with verbal language used in the teaching environment (Carnahan et al., 2009). Lawrence was also

generally engaged during the ‘other’ task but as we can see in the table he is mostly off task and away from the group during the narrative parts of the story whereas he is mostly focused during colouring and when the props of the story are present such as the treasure chest, the map or the stuffed animals. The use of props in storytelling is found to enhance the level of engagement and make the process more enjoyable (Crimmens, 2006).

It was also observed that Lawrence was mainly off task and away from peers between activities especially when there was a longer time gap before moving to the next task. This can be explained by the fact that children with autism often have difficulty transitioning from one activity to another and more so when activity is unfamiliar and not part of their learnt routine (Swanson, 2005).

Another interesting point that arises from the observation is that, although during the colouring activity everyone was sitting together and Lawrence was physically included in the group, his peers were laughing at him when he was talking, which is a sign of exclusion. On the other hand, though when he was the first one to initiate the dance and was correct, one girl, the lion, who appeared to be leading the group throughout the intervention said spontaneously ‘nice try’, which is encouraging and actually a sign of acceptance and inclusion.

To sum up the findings from the first session, the following points seem to be of high importance in relation to the degree of performance of the participants and the reasons behind it as well as indicators for successful intervention.

- The autistic participant:

    - found verbal language hard to follow and struggled with transitions

    - was more on task during music and included during dance although he did perform quite high in all tasks

- Repetition of tasks may be valuable to achievement and high performance
- Peers rejected the child with autism during conversation but celebrated his effort during the dance task.
- The use of tactile and visual props as well as the art task enhanced engagement and enjoyment
- Music was a powerful tool for relaxation and when used to complement storytelling

6.5.2 Session 2

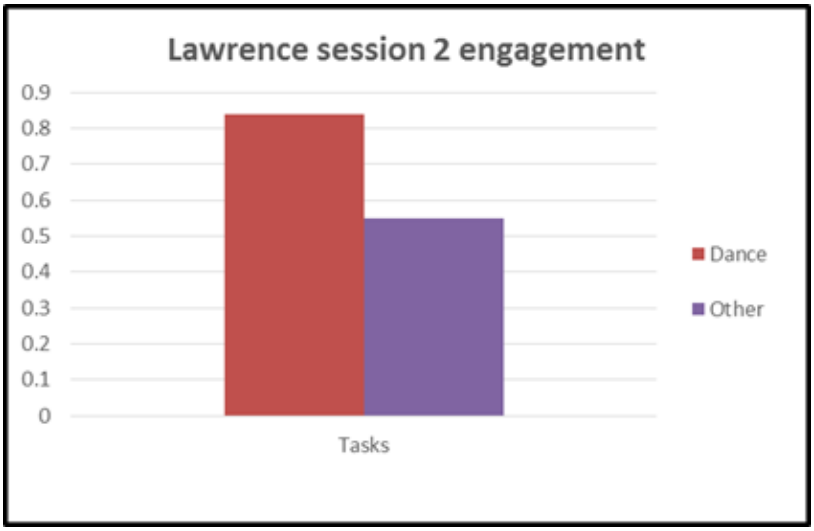
Session 2 took place in the hall this time, which allowed moving more freely around the room as the space is much bigger. However, the equipment the school provided to me to play the music did not work so I had to run the tasks without the music element, therefore ‘music’ and ‘music and dance’ could not be applied.

6.5.2.1 Engagement on task ASC/Non ASC participants

As can be seen in the Figures 6.5.2.1 and 6.5.2.2 below, Lawrence was far more engaged during dance compared to other in this session although it would be interesting to see in which task he would perform best if music was available. All the other participants were present this week and as we can see the 2 boys and 1 girl present similar results to Lawrence’s, performing much better during movement, whereas the two other girls are more ‘on task’ during ‘other’ but small

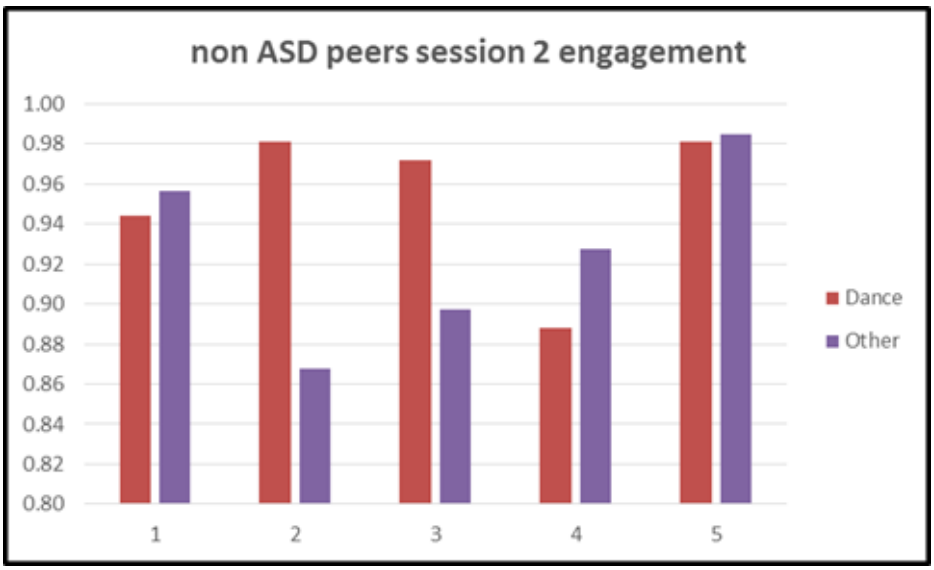
difference is recorded compared to the scores in dance. Interestingly, no one reaches ‘3’ which is the highest score.

Figure 6.5.2.1 Lawrence: session 2, Engagement on task



Notes N=1, percentage of engagement on task in session2 during the different tasks. X represents the tasks (dance, other) and y the percentage of engagement.

Figure 6.5.2.2 Neurotypical peers: session 2, Engagement on task



Notes N=5 percentage of engagement on task for the five pupils in session2 during the different tasks. X represents the tasks (dance, other) for each participant and y the percentage of engagement.

SESSION 2- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
0'-3'	**Other** Story Intro & Recap of session 1	Lawrence is the first to come in the hall holding my hand and sits in the circle. He is waiting with anticipation for me to take the penguin out of the bag. He shouts: '*me, me*' a few times. I ask him if he remembers which animal he was and replies: '*Yes, I was the penguin*'. He is on task, looking at me.	Soon gets distracted by Alicia's toy	They all sit in a circle chatting about their costumes and help me summarise what we did last week and discuss about the task.	*He is mostly on task and seems very enthusiastic about the session as he is the first one to come in. More familiar with me and programme-repetition.*
3'-7'10''	**Other** Story narration and questions	He is on task at times. He puts his hand up when I mention and ask about the penguin during the narration of the story. He responds to simple questions	He is not paying attention to the story for the whole time. He is trying to follow the continuous comments made by his peers.	Almost all on task and engaged. They join in with words and actions, answer to questions and fill in the details in the story. They call out a lot.	*Lawrence seems confused with the plot of the story Use of excessive verbal language*
7'10''-8'20''	**Other** Story Explain dance task	He is on task while I explain how the task needs to be performed and what are the rules for the game. Lawrence does not copy his peers who are slightly naughty		All on task but some need prompting as they are talking to each other and do not listen	*We are all standing which may be helpful for Lawrence to be more focused- he knows a movement activity follows*

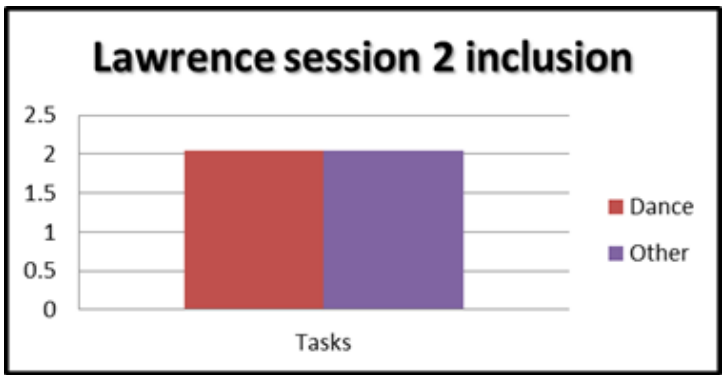
SESSION 2- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
8'20''-18'	**Dance** Task of session Cross lake stepping stones- holding hands	He stands with me at the front and is looking with interest when I demonstrate with Anna. He copies his peers and joins the line. He doesn't want to start first; tries to squeeze in the middle of the line, as he does not want to be at the back. The second time I start first to show them again how to complete the task with less difficulties and Lawrence is second in the line just behind me. He completes the task and follows the instructions all the time holding Daphne's hand. He seems very happy, jumping on the spot Then they try again without my help and Lawrence is all the time on tasks also helping to tidy up by putting away the stones.		The group decides for the penguin to start first but he does not want to so Daphne the leader of group and also the lion is the first one to cross the lake.	*Movement activity is motivating and helps the group to be focused and remain on task- movement enhances cooperation and concentration.*
18'-19'20''	**Dance** Repetition of task from session 1	Lawrence is on task, he remembers what we did last week and moves around the room like the animal chosen each time. Sometimes he needs to copy a peer's movement. He is on		They do the animal walk and movement each time calling the name of the animal. They are very loud, calling out all	*Repetition of task Movement element*

SESSION 2- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
		task throughout.		the time.	
19'30''-21'	**Other** Transition to next activity	When I explain what the game is going to be Lawrence goes off task but he soon joins in and sits down listening carefully and maintaining good eye contact.		They are over stimulated but on task waiting for the new game. They soon calm down and sit on the floor	*Transition is challenging but comes back when realises that is a dance game*
21'-24'40''	**Dance** Unplanned task Touch body parts with partner.	On the first go, 'shoulders', Lawrence goes with Anna and I help them join their shoulders. He then goes off task but comes back when I call him. He seems quite confused about whom to choose next and as he finds no partner in the next one, I do it with him and touch toes. He tries with Daphne during the last turn.		They are all engaged and on task and are trying different moves. They require prompting to choose different partners.	*Mostly on task during movement activity again confused by verbal instructions and speed of task to find different partner*
24'40''-25'10''	**Other** Transition		Lawrence is away and off task	They sit back in the circle being on task	*Transition*
25'10''-28'10'	**Dance** fingers movement	Lawrence joins the circle when we do the fingers game. He is laughing and tries to copy		All on task and engaged; they join in with words and actions.	*During this session he is on task throughout-*

SESSION 2- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
’	game	some movements and sounds. He is now actively on task.			*repetition of task*
28’10’’- 29’20’’	**Other** Story and plenary of session	The session ends with the map and discussing what we did today. Lawrence is both on and off task. He is looking at the map and seems interested; trying to listen but then looks down and away and is not actively engaged. He is calm and remains sat down on the floor with the rest of the group.		They are calm, focused and join in by making comments about the session and rest of the story.	*He is not completely off task as is happening usually during plain storytelling- perhaps movement has helped him calm down, regulate and engage?*

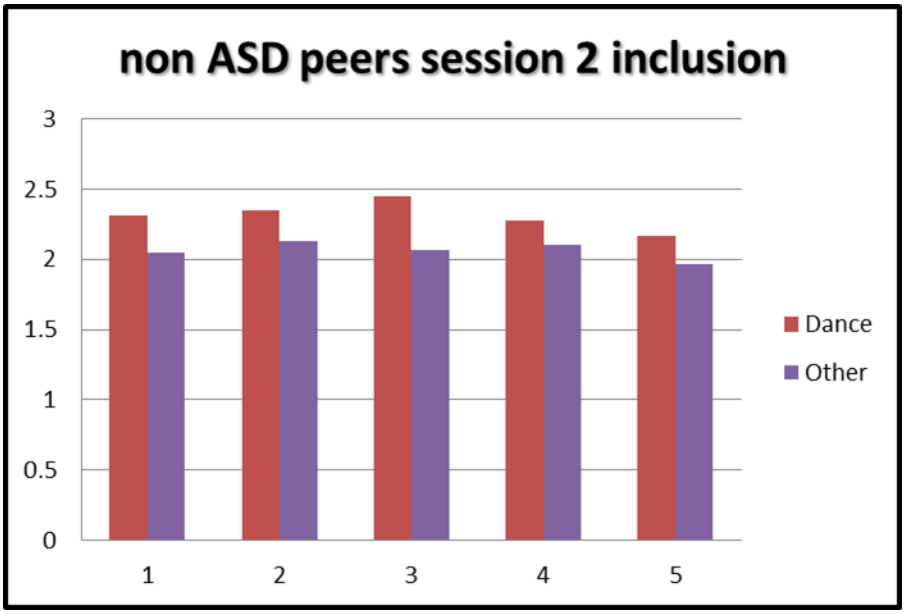
6.5.2.2 Spatial proximity- inclusion/ ASC/ Non ASC participants

Figure 6.5.2.3 Lawrence: session 2, Inclusion



Notes N=1, mean score of level of inclusion in session2 during the different tasks. X represents the tasks (dance, other) and y the level of inclusion (3= highest score).

Figure 6.5.2.4 Neurotypical peers: session 2, Inclusion



Notes N=4, mean of level of inclusion for the four pupils in session1 during the different tasks. X represents the tasks (music, dance, music and dance, other) for each participant and y the level of inclusion (3= highest score).

As we can see in Figures 6.5.2.3 and 6.5.2.4 above, as derived from the quantitative analysis, Lawrence was equally included in the group in both dance and other variables which is also similar to his scores of the first session. However, as we noticed above, the difference of scores between task variables, as far as his

engagement is concerned, is much higher. Thus, in session 2, he might have been included in the group during other activities but not on task.

Regarding the neurotypical participants, we can see a similar picture and an homogeneity between scores with all children scoring slightly higher during the dance task. Compared to Lawrence, they all scored higher than '2', meaning they were also more in physical contact between them especially during the dance condition. The table below might allow us to see whether some properties of dance task promote physical contact and inclusion. Again with the music element missing in this session, it would be interesting to see whether music combined with dance could bring similar or higher scores and results.

SESSION 2- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
0'-3'	**Other** Story Intro & Recap of session 1	Lawrence is coming into the hall holding my hand and sits together with the group in a circle for the whole time. He is starting a social game with one girl and are in contact for around 30''		They all sit in a circle. One girl responds positively to Lawrence's game which involves physical contact (changing hats, patting head)	*He is included and in contact with peer for a few seconds but off task- not interested in story but part of group.*
3'-7'10''	**Other** Story narration and questions	Lawrence is still sitting in the circle but it seems he wants to stand up at few occasions. He is moving his body back and forth and is slightly agitated but still stays together with his peers. He initiates again the same interaction with peer.		They are all sitting and taking part in the activity. Some seem as if they want to stand up and do something more active.	*Verbal language is difficult for him to follow…* *Initiation of Physical Interaction well accepted by peer*
7'10''-8'20''	**Other** Story Explain dance task	Lawrence is standing next to the group-he does not walk away as may have been expected at this point		Everyone standing-all included in the group	*Continues to be part of group- knows a movement task will follow.*

SESSION 2- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
8'20''-18'	**Dance** Task of session Cross lake stepping stones- holding hands	Lawrence has been on task throughout this task but also included in the group and in contact. He wants to always hold someone's hand and to be in the middle and not first, as his peers suggested, nor the last one in the line. Although physical contact (holding hands) is required to complete the task it can be easily performed without any hold. Lawrence is trying to maintain contact with his peers and also using other parts, toes, legs arms.		The group decides for the penguin to start first but he does not want to so Daphne the leader of group and also the lion is the first one to cross the lake. They also hold hands and are in close physical proximity. They want to repeat the task several times.	*Group's decision and encouragement to Lawrence to start first- sign of acceptance and inclusion* *Dance-physical proximity and cooperation-easy task short verbal instruction and demonstration*
18'-19'20''	**Dance** Repetition of task from session 1	Lawrence is included in the group, he remembers what we did last week and moves around the room like the animal chosen each time. He stays near his peers and copies some of their movements.		They are all staying close to each other and are on task and included although they are very loud.	*Repetition of task Movement element*

SESSION 2- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
19'30''-21'	**Other** Transition to next activity	When I explain what the game is going to be Lawrence goes away and off task but soon he approaches the group and sits on the floor with them very close.		They are over stimulated but on task and sit on the floor waiting for the new task to start.	*Transition is challenging but comes back when realises that is a dance game*
21'-24'40''	**Dance** Unplanned task Touch body parts with partner.	On the first go, 'shoulders', Lawrence is in contact with a boy and I help them to join their shoulders. Lawrence then goes away at the corner of the room but comes back when I call him. He seems quite confused about whom to choose next and as he finds no partner in the next one, I do it with him and touch toes. He is in contact with the girl (lion) during the last turn.		They are all included and on task and are trying different moves. They move around in the predefined area but require prompting to choose different partners.	*Included and in contact during movement activity again confused by verbal instructions and speed of task to find different partner*
24'40''-25'10''	**Other** Transition		Lawrence is away and off task	They sit back in the circle being on task	*Transition The only occasion during session during which is solely away/excluded- session 2 involved lots of movement-easier to follow*
25'10''-28'10''	**Dance** fingers movement	Lawrence joins the circle when we do the fingers game. He is laughing and tries to copy		All on task and engaged; they join in with words and actions,	*He is included throughout the task- repetition of*

SESSION 2- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
	game	some moves and sounds. Lawrence is now actively on task and sitting closely to his peers.		sitting closely to each other	*activity*
28'10''-29'20''	**Other** Story and plenary of session	The session ends with the map and discussing what we did today. Lawrence although he is both on and off task is very relaxed, calm and remains sat down on the floor with the rest of the group.		They are calm, focused and join in by making comments about the session and rest of the story. Everyone sitting around the circle.	*He is sitting down for the whole activity also being on task at times- perhaps movement has helped him calm down, regulate and engage?*

6.5.2.3 Summary of session 2

Based on the quantitative analysis, Lawrence, the boy with autism has been far more engaged during the 'dance' task compared to 'other' and in particular storytelling and scored similarly in terms of spatial proximity/inclusion. As previously mentioned the music element was missing in this session due to technical reasons so no comparisons can be drawn. This makes us wonder whether Lawrence would score higher if music was present by itself or combined with dance. Session 3 will help us shed light to this question as the main activity is a music and dance task.

Another interesting point that derives from the statistical analysis is that although Lawrence was off task during the story he was sitting with his peers and did not walk away in this session. As shown in the qualitative observation this could be due to the fact that in session 2, Lawrence was far more familiar with me, the intervention and the structure of session and seemed more calm and ready to learn and participate. He was very enthusiastic to take part and was the first one to come in the room, holding my hand. Therefore, repetition of task, as also hypothesised in session 1, can enhance participation, engagement and inclusion. Similarly, also to the first session, transitions between activities and verbal language were negative parameters to Lawrence's engagement. He was however approaching the group and participated when he knew that a dance task was going to follow.

As a result, in this session, movement appeared to be a motivating activity that helped the children to be focused and remain on task as well as to calm down and

regulate their tensions and emotions. Simple movement sequences, as those used in the session, can enhance cooperation and concentration as well as provide opportunities for physical contact and interaction. Kaufman (2006) maintains that 'dance experiences create opportunities for meaningful social interactions […], can connect us with one another and promote a deepened sense of community (op. cit.; 29).

As also seen in the first session, the neurotypical participants showed that Lawrence's efforts in dance are appreciated and therefore they invite him to go first and respond to his attempts to initiate physical interaction at different occasions throughout the session. In addition, dance tasks are generally easier to follow as they do not require much verbal language. Overall, this session contained a lot of dance tasks and the boy with ASC was mostly engaged and included with the only exception of one short part of storytelling.

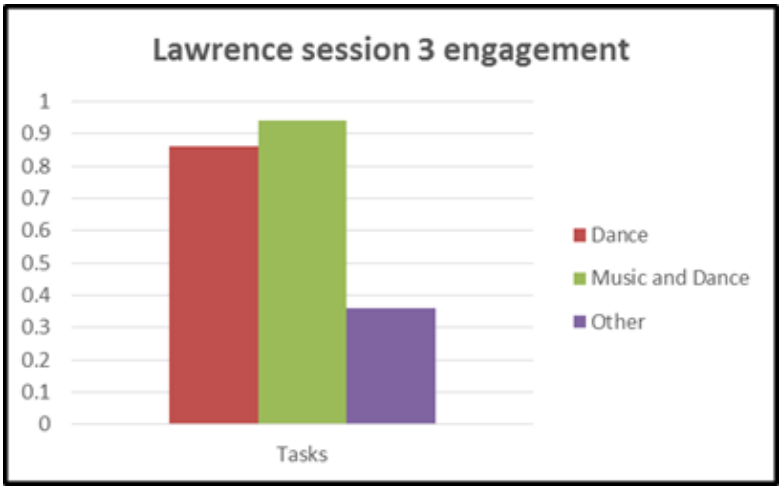
To conclude, below are the main points that derive from the analysis of session 2:

- Transitions and excessive verbal language are a barrier to the child with ASC in terms of his level of understanding, engagement and participation in the group.
- Repetition of routines, situations, people and tasks promotes focus on activities and group inclusion
- Dance is a valuable tool in enhancing self-regulation, concentration, cooperation and opportunities for social interaction through simple activities and without the need of excessive verbal language.

6.5.3 Session 3

6.5.3.1 Engagement on task/ ASC participant

Figure 6.5.3.1 Lawrence: session 3, Engagement on task



Notes N=1, percentage of engagement on task in session3 during the different tasks. X represents the tasks (dance, music and dance, other) and y the percentage of engagement.

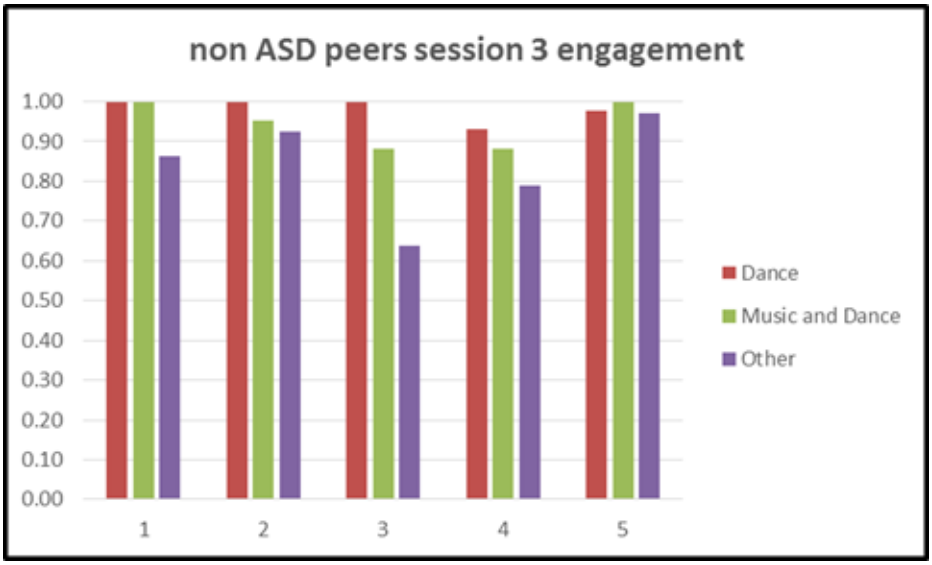
The third session took place in the classroom, where although the room was smaller it allowed for the music/dance task to be completed at a satisfactorily level. There was enough space for the children to perform the task but also to move freely around the room. In fact, the 'music' task quickly became a 'music and dance' task since the participants spontaneously were moving and dancing to the music despite my instructions to listen to the song without performing the moves.

As we can see in Figure 6.5.3.1, Lawrence scored relatively high in all three tasks but was slightly more engaged during music and dance, then during dance and finally during story and other activities. His peers, as we can see in Figure 6.5.3. 2, showed relatively similar results, being more engaged during dance followed by music and dance and then other. Three of the participants reach the highest score during the dance task and two of them during music and dance but overall are

mostly engaged during all tasks during the session. Only one boy (child 3) shows a more diverse performance by scoring a maximum during movement, followed by music and dance and much lower during other activities.

6.5.3.2 Engagement on task/ Non ASC participants

Figure 6.5.3.2 Neurotypical peers: session 3, Engagement on task



Notes N=5, percentage of engagement on task in session3 during the different tasks. X represents the tasks (dance, music and dance, other) for each participant and y the percentage of engagement.

The table that follows will allow us to see how and why dance is the main task for engagement but also how a good rate is achieved by all pupils being mostly on task throughout the tasks and session.

SESSION 3- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
0'-2'	**Dance** fingers movement game	Lawrence copies with some actions and sounds and laughs when his friends do so. He is participating in this movement game more and more every time.		They sit around the circle ready to do the fingers game. All engaged and join in	*Repetition of task/movement activity Beginning of session*
2'-4'30''	**Other** Props for story and recap of last session	Lawrence is mostly on task at this part of the session. He is waiting patiently for me to give him the penguin toy and is helping his peers to bring the rest of the props (map, stones). He is off task when peers verbally describe what we did last week but he is maintaining interest and good eye contact, being calm.		Most of the children are on task and join in by calling out parts of the story and how we crossed the lake. They are loud and moving a lot.	*Verbal language/loudness-off task Props-on task*
4'30''-6'30''	**Dance Repetition** of task	Lawrence is on task and remembers the task from last week. He is focused and works cooperatively with his peers. Lawrence is the last in the line. He jumps with joy when the task is completed.		They line up without prompting. They remember what to do but they just need help with the direction in the room, as the classroom area is quite small. They hold hands and complete task with success.	*Repetition of task Movement activity*

SESSION 3- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
6'40''-8'	**Other** Transition between Activities	He copies peers who are naughty at the moment and like most of them goes off task during the short transition between the music and dance task which was repeated last week and the story. He is on task for short times.		It takes them quite a long time to calm down and sit quietly around the circle to listen. Most of the children are off task during this time or engaged for short periods	*Transition from a highly motivating activity and active to sitting down*
8'-11'30''	**Other** Story Narration of this week's main story part		Lawrence is now off task. He is sitting in the circle playing with the penguin but is not listening actively to the story nor looking at his friends or me. He is mainly interested on what is happening in the rest of the room.	The rest of the children are mostly on task during the narration of the story and join in with words and actions. Only one boy goes off task for a significant amount of time.	*Verbal language The other children who are working on the table in the room also distract him.*

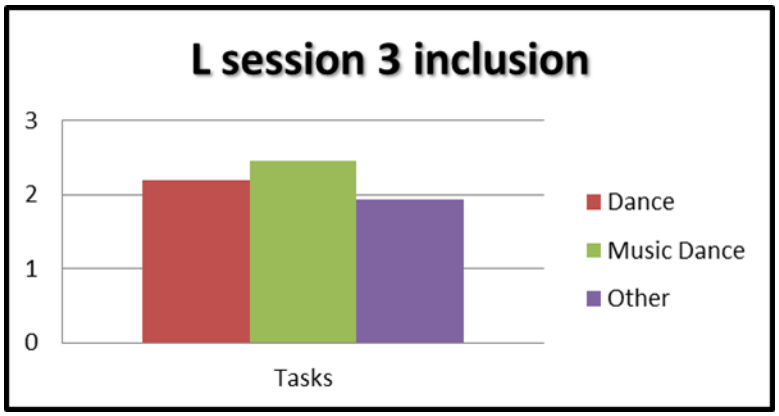
SESSION 3- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
11'40'' - 14'20''	**Dance** Demonstration /practice of dance w/o music	He joins the circle holding hands. He stamps his feet and does the steps to both sides. He performs all the moves even the free 'crazy' part of the dance. He chooses Alicia when I ask them to find a partner. He holds hands throughout the task and is actively engaged and focused.		We all make a circle in order to start the dance for this week's task. Everyone is listening to instructions and performs the moves.	*Element of dance and movement/easy and clear instructions, physical aspect of activity.*
14'30'' - 19'20''	**Music & Dance** Task of the session	Lawrence looks more enthusiastic when the music plays. He calls Alicia when is time to find a partner. He is doing really great and he does the free dance by himself without the need to copy his peers. Lawrence joins in with movements. He is always on task and he is trying new moves during the free dance		They are all doing great! We do it a few times but I ask them to choose a different partner in advance. Anna chooses Lawrence and we dance it again from the top. They count with me.	*Element of dance…activity is complemented by Music- Lawrence is happier and remains on task.*
19'30'' - 22'10''	**Other** Transition and story		Lawrence is not engaged although he is calm and sitting nicely. He is now	They sit back in the circle being on task but took them a while to keep	*Transition- verbal aspect of task*

SESSION 3- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
			off task.	quiet/listen/engage	
22'10''-24'30''	**Dance** fingers movement game	The session closes with the fingers game. He comes back to join the group. Lawrence joins in with more moves, words, and also says with me the instructions (i.e. '*close the door*'). He is distracted for a few seconds when other people enter the room but re-engages.		All on task and engaged; they join in with words and actions.	*Repetition of task* *It is his best attempt to join in the story both verbally and with actions as his peers.*
24'30''-25'10''	**Other** Plenary and tidy up	The session ends with a quick look at the map and what we did today and at the same time tidying up the props and room. Lawrence is both on and off task.		Everyone is both on and off task.	*He seems not sure about what he needs to do next.* *Lawrence copies his peers to tidy up who are over-active and loud.*

6.5.3.2 Spatial proximity- inclusion/ ASC/ Non ASC participants

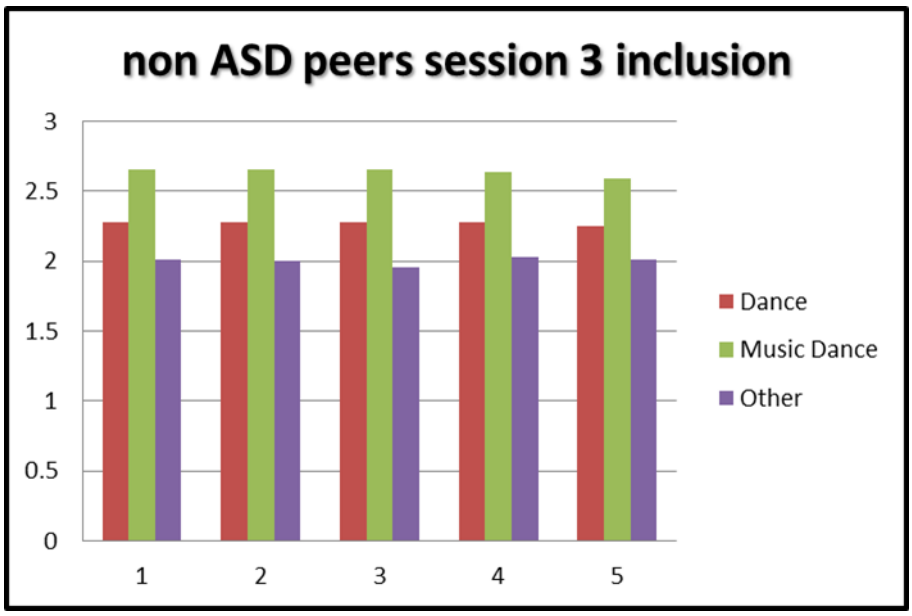
As we can see in the Figures 6.3.3 and 6.3.4 below, all the children show similar results regarding their spatial proximity and inclusion in the group. They were all more included during ‘music and dance’, followed by dance and finally other. The neurotypical peers scored slightly higher than the boy with ASC, above the 2.5 scale, being more in contact during the music and dance task. They also score on average 2.2 during dance and 2 during other with the exception of Lawrence and another boy who score below 2 during ‘other’.

Figure 6.5.3.3 Lawrence: session 3, Inclusion



Notes N=1, mean score of level of inclusion in session 3 during the different tasks. X represents the tasks (dance, music and dance, other) and y the level of inclusion (3= highest score).

Figure 6.5.3.4. Neurotypical peers: session 3, Inclusion



Notes N=5, mean of level of inclusion for the four pupils in session1 during the different tasks. X represents the tasks (dance, music and dance, other) for each participant and y the level of inclusion (3= highest score).

The table below, describing the main behaviours of the participants throughout the session, shows how music and dance promoted the physical contact between the children and for what reasons the two boys were slightly away/excluded from the group during other, as well as in which particular tasks. Finally, it allows us to understand why although the children were more engaged during dance they were more included during music and dance.

SESSION 3- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
0'-2'	**Dance** fingers movement game	Lawrence is sitting on the floor together with his peers and is included and engaged throughout the task.		They sit around the circle ready to do the fingers game. All included and sitting closely.	*Repetition of task/movement activity Beginning of session*
2'-4'30''	**Other** Props for story and recap of last session	Lawrence is included in the group, sitting within the circle. When the children stand up to help me with the props, he is on task and included in the group. He is quiet and calm and not fidgety like his classmates.		Everyone is sitting together on the floor being included. Some initiate physical contact when transitioning to the next task. They seem fidgety.	*He wants to be part of the group but maybe cannot follow the story or is not as motivating as music/dance tasks.*
4'30''-6'30''	**Dance Repetition** of task	Lawrence is participating actively in the task and is happy to work with his friends. He is not holding hands at all times but he stays near the group and initiates to maintain physical contact.		They line up without prompting. They hold hands at all times and complete task with success.	*Repetition of task Movement activity easy tasks that promote touch/physical contact.*

SESSION 3- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
6'40''-8'	**Other** Transition between Activities	He copies peers who are naughty at the moment and goes away during the short transition between the music and dance task which was repeated last week and the story. He soon joins the circle.		It takes them quite a long time to calm down and sit quietly around the circle to listen. They are however sitting together on the floor	*Transition from a highly motivating activity and active to sitting down can be challenging/requires this time*
8'-11'30''	**Other** Story Narration of this week's main story part	Lawrence is sitting in the circle playing with the penguin but is not listening actively to the story nor looking at his friends or me. He is mainly interested on what is happening in the rest of the room and is off task but does not move away from the group.		They all sit down together and are included and on task.	*Verbal language The other children who are working on the table in the room also distract him.*
11'40''-14'20''	**Dance** Demonstration /practice of dance w/o music	He joins the circle holding hands. He holds hands throughout the task and is actively engaged and focused. Seeks and accepts physical contact by peers.		We all make a circle in order to start the dance for this week's task. Everyone is listening to instructions and performs the moves.	*Element of dance and movement/easy and clear instructions, physical aspect of activity.*

SESSION 3- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
14'30'' - 19'20''	**Music & Dance** Task of the session	Lawrence looks more enthusiastic when the music plays. He initiates physical contact by calling his peer when is time to find a partner. He is always included and in contact when required and on task.		They all stay in the group and in contact. Anna chooses Lawrence and when is time to find a new partner.	*Element of dance…activity is complemented by music. His peer chooses to dance with him-inclusion*
19'30'' - 22'10''	**Other** Transition and story	They sit back in the circle and it takes Lawrence very little to calm down compared to the others. He is now off task, not listening to the story but he is sitting nicely without fidgeting. He goes away to the other side of the room for a few seconds.		They sit back in the circle being on task but took them a while to keep quiet/listen/engage.	*Transition- verbal aspect of task/loses interest but wants to be part of group.*
22'10'' - 24'30''	**Dance** fingers movement game	The session closes with the fingers game. He comes back to join the group. Lawrence joins in with more moves, words. Gets distracted by people who enter the room but does not leave the group.		All included and engaged; they join in with words and actions.	*Repetition of task It is his best attempt to join in the story both verbally and with actions as his peers.*

SESSION 3- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
24'30''-25'10''	**Other** Plenary and tidy up.	The session ends with a quick look at the map and what we did today and at the same time tidying up the props and room. Lawrence goes away after a while.		Everyone is both sitting and moving away.	*He seems not sure about what he needs to do next. Lawrence copies his peers to tidy up.*

6.5.3.3 Summary of session 3

The third session of the intervention was particularly good for Lawrence, the boy with autism, who managed to reach his maximum score so far being more engaged during the dance variable. He also performed really well in music and dance. Lawrence also achieved his highest score throughout the sessions in the inclusion variable, during this session's music and dance activity. Session 3 appears therefore to be successful, as it was also found from the quantitative analysis across all groups and participants. This could be due to several factors:

a) being in the middle of the programme (children are familiar with me, the structure of the session and the activities)

b) effect of the particular music and dance task

c) effect of both previous and current session's task (more opportunities for music and dance or particular activities- choice of props/movement sequence/music). Detailed analysis and comparison of the exact session from all the groups may allow us to draw specific conclusions.

Another interesting aspect of the session was that Lawrence has been considerably more on task after the music and dance activity and joined in more for the remaining part of the session (storytelling and fingers game) compared to the beginning of the session. He was also more relaxed, focused and ready to work and it seems that the music and dance activity helped him to regulate himself and prepared him to learn. The physical aspect of the chosen tasks seems to work well at a sensory level helping Lawrence to self-regulate and calm down. In comparison to his peers, after the physical activity he took less time to re-engage and focus. Research has shown that children with ASC find it difficult to self-regulate their

emotional and behavioural responses and remain on task (Eaves & Ho, 1997). It has also been found that sounds can be used to stimulate, calm and organise the child, in preparation for engagement in purposeful activity (Bettison, 1996; Rimland & Edelson, 1995).

In addition, in this session, music complemented the movement and even promoted it. The predetermined music task of the session became a music and dance task when the children spontaneously started to improvise to the music and moved around the room according to the rhythm and mood of the musical piece. Lawrence, as well as his peers, showed good movement awareness and coordination.

Furthermore, as also noted in session 2, the dance tasks, also combined with music, offer good opportunities for co-operation and physical contact through easy tasks which do not require relying on verbal language. The music and dance tasks performed in this session were also beneficial in promoting acceptance and inclusion within the group; e.g. A boy participant chose Lawrence to do the partner dance with. (previous examples: session 1- peer approved and praised Lawrence's effort in dance task, session 2- group selected Lawrence to be first in the line).

The analysis of this session further supported the hypotheses made in the previous sections regarding the difficulty of children with autism to process verbal language and transition between tasks and the benefits from repetition. However, two new points arose:

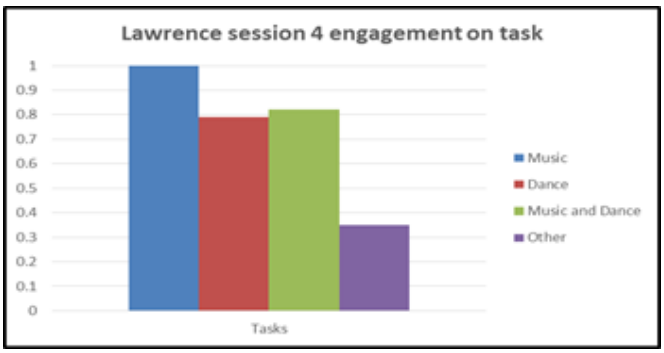
- Dance and movement, also combined with music, can help children to self-modulate, organise their responses to sensory stimuli and adapt to the challenges of the environment.
- Music was found to be a powerful tool in promoting spontaneous movement during this session as well as more structured dancing from the part of the pupils. It is worth examining the relationship between music and movement in teaching and the possible effect and benefits when incorporating one element into the teaching of the other.

6.5.4 Session 4

6.5.4.1 Engagement on task/ ASC participant

In session 4, Lawrence was engaged during most of the tasks and achieved the highest score, 3, during the music variable followed by dance, music and dance and finally other (see Figure 6.5.4.1). All other participants scored 3 in music and showed good performance during dance. Music and dance as well as other have been overall slightly lower (see Figure 6.5.4.2). Interestingly, in session 4 that music is again performed as a task by itself all children achieve the maximum score.

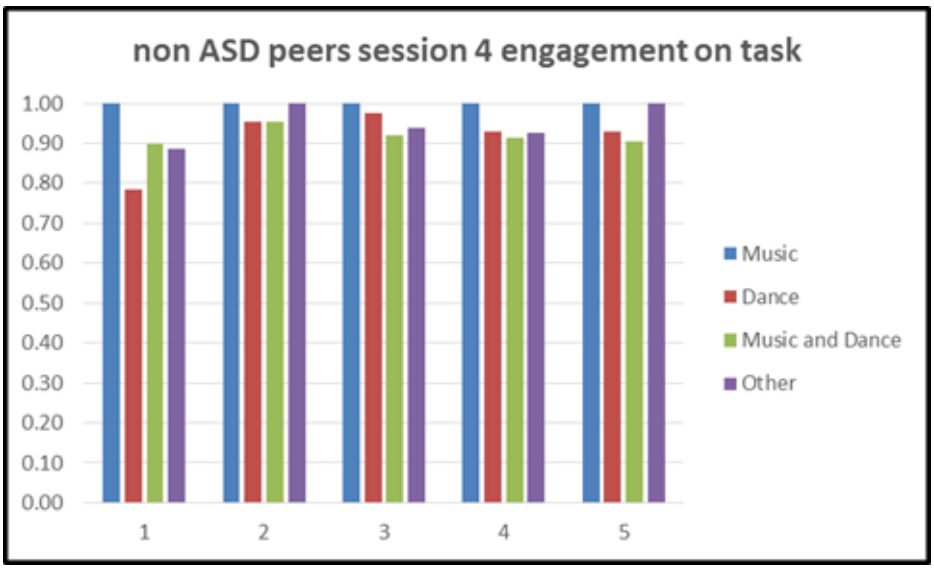
Figure 6.5.4.1 Lawrence: session 4, Engagement on task



Notes N=1, percentage of engagement on task in session 4 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

6.5.4.2 Engagement on task/ Non ASC participants

Figure 6.5.4.2Neurotypical peers: session 4, Engagement on task



Notes N=5, percentage of engagement on task for the five pupils in session4 during the different tasks. X represents the tasks (music, dance, music and dance, other) for each participant and y the percentage of engagement.

SESSION 4- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
0'- 2'50''	**Dance** fingers movement game	Lawrence comes in the hall following the group and sits down. He is very fidgety and is not as focused as in the previous sessions during this task. He goes on and off task throughout the activity.		They all sit down and are mostly engaged. They are arguing about who will be named during the game (each time 2 children)	*Repetition of task/movement activity* *Beginning of session* *He is very fidgety today*
3'- 3'30''	**Other** Story		He is off task and away from group. Seems not interested.	We take out the map and discuss what we did last week.	*Verbal language/loudness- off task* *Could be having a bad day?*
3'40''- 6'50''	**Dance Repetition of task** marking steps without the music	Lawrence is playing with Andrew whilst the rest of the group is relatively naughty. He performs the dance nicely. Lawrence is on task most of time but goes off task for a few seconds.		They are arguing about which partner they will choose. They start the dance in partners but I prompt them to remember how it was done last week asking them some questions like: '*do you remember how we start? what is the first movement*?'	*Repetition of task* *Movement activity* *Influenced by peers' behaviour*

SESSION 4- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
7'-9'	**Music and dance** Repetition of task	Lawrence is on task doing the dance well in time to music and follows his peers.		They do the dance really well and cooperate with each other	*Music element added on task (same as originally taught)*
9'10-14'50''	**Other** Story Narration of this week's main story part		He needs prompting to come and sit down for the story. I ask him to do jobs like bringing me the bag with the animals. L is not responding to questions or participating during storytelling.	I narrate the rest of the story and I ask questions. All children are on task and most of them are actively participating.	*Verbal language Struggling today with concentration since beginning of session- was on task though during repetition of last week's task (tiger's dance with and without music)*
15'-16'	**Dance** Demonstration/practice of dance w/o music	He seems very interested to see the tunnel and rainmaker. He joins the line and smiles, jumps with joy. He is looking carefully at his peers when I explain what we need to do in this task. Lawrence asks to be the first to go through the tunnel.		The children understood the task and did it very well.	*Element of dance and movement/easy and clear instructions, physical aspect of activity.*

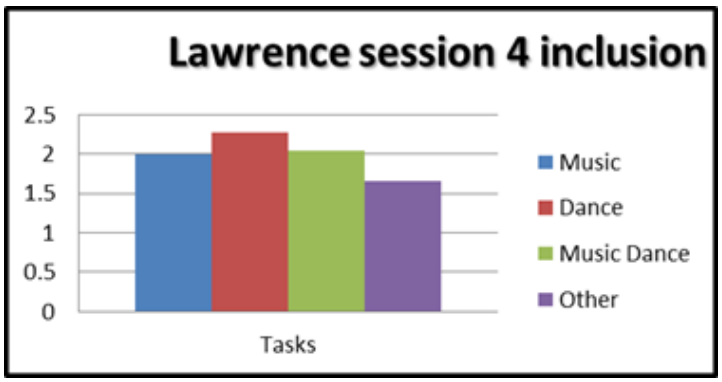
SESSION 4- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
16'10'' - 21'40''	**Music & Dance** Task of the session	He is waiting patiently for his turn each time. Lawrence goes through at the right moment and asks for the rainmaker from Anna saying '*It's my turn*'. He is playing vividly, is very happy, wants to go through again and is prompting his peers to go quickly. He goes through for the second time and passes the rainmaker to Alicia.		All children are on task and engaged.	*Element of dance…activity is complemented by music- Lawrence is happier and remains on task. He needs the physical and musical element especially today- sensory?*
21'50'' - 22'50''	**Other** transition between activities		He goes off task during transition between music and dance activities	Transition between activities is hard for all of them. They are slightly off task	*Transitions*
22'50'' - 23'20''	**Music and Dance** song of week- dance		Anna is chasing Lawrence and they start a chase game all together.	When I put the music on they all stand up and dance around the room.	*Off task but included (chasing each other, moving around the room) Music encourages spontaneous movement*

SESSION 4- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
23'20''-25'30''	**Other** description of task		Lawrence is off task. He is at the other side of the room. He joins his peers for a few seconds but is off task. He stands up and goes away again.	I stop the music and they come close. Then they all sit down and I tell them again to remember the rules and to be nice and wait for their turn and listen. We are ready to sing the song. We chat about the song and the movie.	*He seeks more movement finds it difficult to regulate this sensory need.*
25'30''-26'20''	**Music** task of session song	He joins in as soon as the music starts and is sitting quietly. He is not singing or humming but is listening to the song.		They are all listening to the song quietly and some are repeating the words after me	*Calming effect of music*
26'30''-27'	**Other** re-introduce task and lyrics		He is off task and away.	They are mostly on task listening carefully and quietly.	
27'-28'	**Music and Dance**		Lawrence is mostly off task; he seems unsure of what is required of him and is trying to copy peers without success.	I put the song on and allow them to move. Daphne asked if they can dance. They all move around the room making lots of noise so I decide to repeat	*Unstructured task improvised by peers creates confusion Peers are moving roughly and are loud*

SESSION 4- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
				the tunnel task again as they need a bit more structure.	*noisy environment*
28'-32'20''	**Other** Transition and story		He is off task-running around the room, playing with the video camera	They need lots of prompting but sit nicely in the circle looking at the map and talk about the story	*Does not want to sit down Needs movement to regulate himself*
32'30''-33'40''	**Music and dance** Task of the session	He comes back when he sees the tunnel but goes away again for seconds and comes back to go through the tunnel.		Everyone is on task	*Music and dance task itself*
33'50'',-34'20''	**Other** Tidy up and end of session	He picks up the rainmaker and plays in the corner.		They are helping to tidy up	*He still needs to move around- may need more quiet space/ time alone*

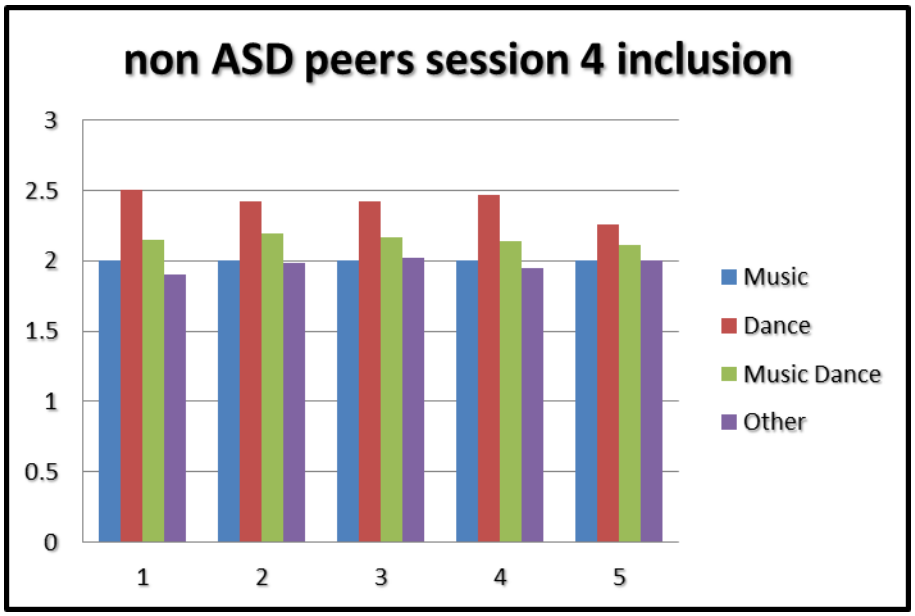
6.5.4.2 Spatial proximity- inclusion/ ASC/ Non ASC participants

Figure 6.5.4.3 Lawrence: session 4, Inclusion



Notes N=1, mean score of level of inclusion in session 4 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

Figure 6.5.4.4 Neurotypical peers: session 4, Inclusion



Notes N=5, mean score of level of inclusion in session 4 during the different tasks. X represents the tasks (music, dance, music and dance, other) for each participant and y the level of inclusion (3= highest score).

As we can see in Figures 6.5.4.3 and 6.5.4.4 above, all participants showed a similar performance during session 4 in terms of their inclusion in the group. The highest score for all is marked during the dance task, followed by music and dance, dance and other. For Lawrence, the boy with autism, the difference in score between music and dance and music by itself is considerably small.

In the tables below, we see the specific behaviours and situations when inclusion was promoted. In session 4, music and dance was the predominant task; and dance was not designed in advanced to be performed on its own. At the beginning of the session dance was used to mark the steps of tasks and later occurred after improvisation from the part of the participants.

SESSION 4- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
0'- 2'50''	**Dance** fingers movement game	Lawrence comes in the hall following the group and sits down. He is very fidgety and is not as focused as in the previous sessions during this task. He goes for a run at two occasions and is not as focused as in the previous sessions during this task.		They all sit around the circle and although they are arguing about who will be named during the game (each time 2 children) they ask me to do it for Lawrence [inclusion].	*Beginning of session* *He is very fidgety today* *Positive inclusion aspect-acceptance from peers.*
3'- 3'30''	**Other** Story		He is off task and away from group. He is running around the group and around the room.	We take out the map and discuss what we did last week.	*Verbal language* *Needs to move (sensory)*
3'40''- 6'50''	**Dance Repetition of task** marking steps without the music	Lawrence stays very near the group most of the time. He is included and in contact with his peers, both initiating and accepting physical interaction.		They are dancing in circle and partners remaining included and in contact with each other.	*Repetition of task* *Movement activity*

SESSION 4- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
7'-9'	**Music and dance** Repetition of task	Lawrence is included in the group and in contact with his classmates as required.		They do the dance really well and cooperate with each other. All included and in contact	*Music element added on task (same as originally taught)*
9'10-14'50''	**Other** Story Narration of this week's main story part	Lawrence is very fidgety and needs lots of prompting to sit down. Lawrence is not responding or participating but he is still sitting with the rest of the group. He is far more relaxed and calm than before [music and dance task helped]. He does one more run and comes back to sit down and this time closer to the group.		I narrate the rest of the story and I ask questions. All children are on task and most of them are actively participating. All included and sitting in the circle next to each other.	*Verbal language Struggling today with concentration since beginning of session- was on task though during repetition of last week's task (tiger's dance with and without music) music and dance impact*
15'-16'	**Dance** Demonstration/ practice of dance w/o music	He seems very interested to see the tunnel and rainmaker. He joins the line and is very happy staying near his peers at all times. Lawrence asks to be the first to go through the tunnel.		The children understood the task and did it very well.	*Element of dance and movement/easy and clear instructions, physical aspect of activity.*

SESSION 4- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
16'10''- 21'40''	**Music & Dance** Task of the session	He is waiting patiently for his turn each time. Lawrence goes through at the right moment and asks for the rainmaker from Anna saying '*It's my turn*'. He wants to go through again and is prompting his peers to go quickly. He goes through for the second time and passes the rainmaker to Alicia. He then runs around the room but comes close to the group and goes through again.		All children are on task and engaged. They stay together and create opportunities for physical interaction.	*Element of dance…activity is complemented by music- Lawrence is happier and remains included and in contact. He needs the physical and musical element especially today- sensory?*
21'50''- 22'50''	**Other** transition between activities		He goes away during transition between music and dance activities	Transition between activities is hard for all of them. They are slightly off task but still included.	*Transitions*
22'50''- 23'20''	**Music and Dance** song of week- dance	Anna is chasing Lawrence and they start a chase game all together.		When I put the music on they all stand up and dance around the room together.	*Included (chasing each other, dancing around) even though being off task Music encourages spontaneous movement*

SESSION 4- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
23'20''-25'30''	**Other** description of task		Lawrence is away and excluded. He is at the other side of the room. He joins his peers for a few seconds but soon stands up and goes away again.	They are all sitting next to each other in the circle despite being slightly off task.	*He seeks more movement finds it difficult to regulate this sensory need.*
25'30''-26'20''	**Music** task of session song	He joins in as soon as the music starts and is sitting quietly. He is not at all fidgety.		They are all sitting nicely on the floor listening to the song quietly.	*Calming effect of music*
26'30''-27'	**Other** re-introduce task and lyrics		He is off task and away.	They are still sitting in the circle listening carefully.	*Verbal aspect without props or music/movement.*
27'-28'	**Music and Dance**	Despite being off task he stays near the group trying to figure out what he is required to do or to copy his peers.		I put the song on and allow them to move. They all move around the room staying together in the group.	*Music offers opportunities for physical interaction, freedom to explore space, movement and group work.*

SESSION 4- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
28'-32'20''	**Other** Transition and story		He is off task-running around the room, playing with the video camera	They need lots of prompting but sit nicely in the circle looking at the map and talk about the story	*Does not want to sit down Needs movement to regulate himself*
32'30''-33'40''	**Music and dance** Task of the session	He comes back when he sees the tunnel but goes away again for seconds and comes back to go through the tunnel.		Everyone is included in the group and working together nicely.	*Music and dance task itself*
33'50''-34'20''	**Other** Tidy up and end of session		He is playing with the rainmaker in the corner of the room.	They are all helping to tidy up. Work co-operatively.	*He still needs to move around- may need more quiet space/ time alone*

6.5.4.3 Summary of session 4

This session has been very successful with children achieving high scores, including Lawrence who for the second time, as in session 3, reached the maximum score, 3. In the previous session he was more engaged during the dance variable, whereas in session 4 he was more on task during music.

Prominent during this session was Lawrence's need to move a lot around the room and his difficulty to remain sitting on the floor with his peers and join in. Although this behaviour was also noticed since the beginning of the programme, it became more evident this week. Lawrence's inability to remain still and the need to seek movement engage in different repetitive movements can be explained by possible sensory processing difficulties.

As seen in chapter 2, individuals with autism often struggle to filter and adapt to sensory stimuli and to regulate the degree and intensity of their responses to the sensory input (Miller and Lane, 2000). Children with ASC can be hyper- or hypo-sensitive in any of the seven senses or present with combinations of sensory sensitivities. Their reactions to a similar sensory input may also vary. They may react aversively to sudden loud noises, while seeking repetitive noise making. In order words, they may at times seek repetitive and familiar sensory input to screen out input when overwhelmed or on the other hand when they are under stimulated (Ashburner et al., 2008).

In this particular case, Lawrence could be hyposensitive in the area of vestibular system, which helps maintain body balance, posture and body movement. He may be feeling a need to rock, swing or spin in order to get some sensory input if under stimulated or uninterested.

On the other hand, Lawrence in this session was interested in the tasks, especially the ones involving music and movement, and the props used, such as the tunnel and rainmaker added to his enthusiasm. It is also interesting to see that Lawrence's peers include him more this week and make him feel more part of the group especially during transitions and free play. They are also giving their turn to him at several occasions throughout the session.

Overall, this session reinforces all the assumptions derived from the analysis of the previous sessions regarding the benefits of music and dance as well as the areas which are challenging for pupils with autism.

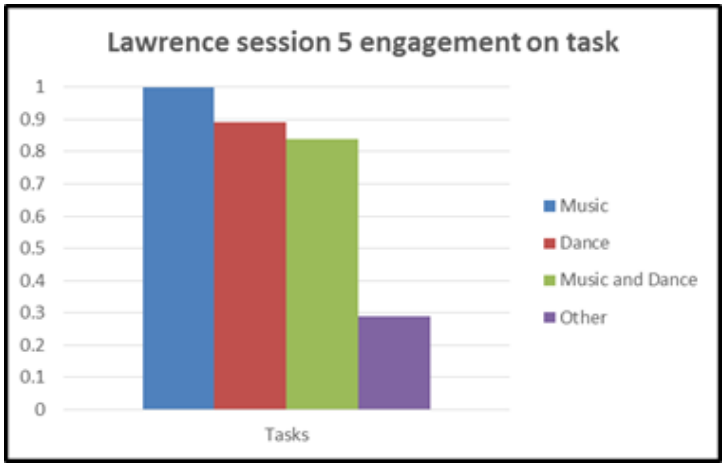
One new point that arose from this session is the need for structure of the child with ASC. In the 27'-28' period, I put the music on in order to perform a music task. The participants however started to move around the room, some of them even dancing, and therefore 'created' a music and dance task. Lawrence, despite being included and wanting to join in, was soon 'off task' as he was unable to follow his peers and lost interest in the activity. It seems that the lack of structure in the dance routine prevented him from understanding and participating. It is clear from the literature that children with autism need routine and structure in their educational and life environment (Schopler and Mesibov, 1995). More specifically,

Most individuals with ASC benefit from structure, order and predictability. The use of pre-planned strategies and tasks, routines and visual supports can serve this function and help to reduce stress and manage anxiety. Routines often serve an important function - they introduce order, structure and predictability and help to manage anxiety (Mesibov and Shea, 1996).

6.5.5 Session 5

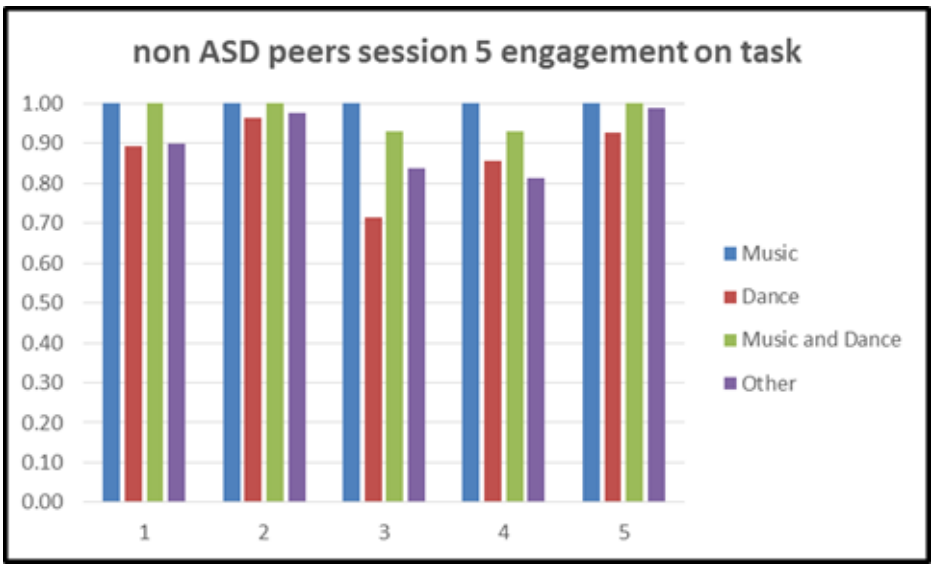
6.5.5.1 Engagement on task/ ASC and non ASC participants

Figure 6.5.5.1 Lawrence: session 5, Engagement on task



Notes N=1, percentage of engagement on task in session 5 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

Figure 6.5.5.2 Neurotypical peers: session 5, Engagement on task



Notes N=5, percentage of engagement on task for the five pupils in session 5 during the different tasks. X represents the tasks (music, dance, music and dance, other) for each participant and y the percentage of engagement.

As we can see from the Figures 6.5.5.1 and 6.5.5.2 above, session 5 has been a good session overall. Lawrence, the boy with ASC, was fully engaged at all times during the music variable, scoring the maximum (3), as also occurred during session 4. He also performed well during music and dance as well as during dance and all other tasks. All the other children scored the maximum during the music task and three of them during music and dance. High scores were reported during 'other' and finally during dance. It is worth mentioning that Lawrence performed better during dance than some of his peers with 'other' being the task during which he was the least involved. The table that follows allows us to define the reasons why this session was particularly good and why Lawrence was on task during dance often more compared to his peers.

SESSION 5- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
0'-3'30'	**Other** Story- Intro of session		Lawrence is off task at the beginning of the session. Plays with his toy alone	They are all sitting in a circle playing with the animals, listening to the story, joining in.	*Language More interested in motivating toy*
3'40-4'10''	**Dance** Repetition of task w/o music	Lawrence is on task as soon as we stand up to practice the activity from last week's session.		The children remember what they have to do but I demonstrate it once with the changes we need to make.	*He is on task despite the change in the activity (we are using chairs as I forgot to bring the tunnel with me-instead of crawling we walk between the chairs). Music helps him to start and stop, walking to the rhythm, he enjoys playing the maracas.*
4'20''-9'	**Music and Dance** Repetition of task from session 4	Lawrence is waiting for his turn and is on task. Occasionally he is rushing but then walks slowly as we repeat the sequence three times successfully. Lawrence needs at times little prompting to wait for his turn and starts walking when the music starts. He does not want to give away the instrument but he does eventually. Off task for a few seconds.		They are all engaged and do the task nicely.	

SESSION 5- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
9'-9'20''	**Other** Transition		Off task and away.	They are off task-running around the room. The transition to the story part is quite difficult so I put on the song.	*Transition is difficult (movement-sitting down)*
9'30-10'	**Music & Dance** Song (they add dance part)	He is on task, follows peers.		As soon as I put on the song, they sing and dance. They sit down in the circle when the song is in the middle.	*Music helps transitioning*
10'-11'20''	**Music** Song	Lawrence is not using many words but is copying Anna as she taps the rhythm on her knees.		They are all happy and have calmed down considerably. They sing all together.	*Music-engagement and cooperation-inclusion*
11'30''-19'20''	**Other** Story	Lawrence is playing with the penguin without paying attention. At several occasions, he is doing some great eye contact and seems interested. He is also absorbed in playing with the penguin and goes off task most of the time. Lawrence says '*I want to go back to class*' and I ask him if he doesn't want to play with us anymore. He does not reply but also does not stand up.		I narrate the rest of the story and they all start calling out. They are suggesting solutions for the incident in the story.	*Language Comments by peers create more confusion. Effort to follow the task and join in.*

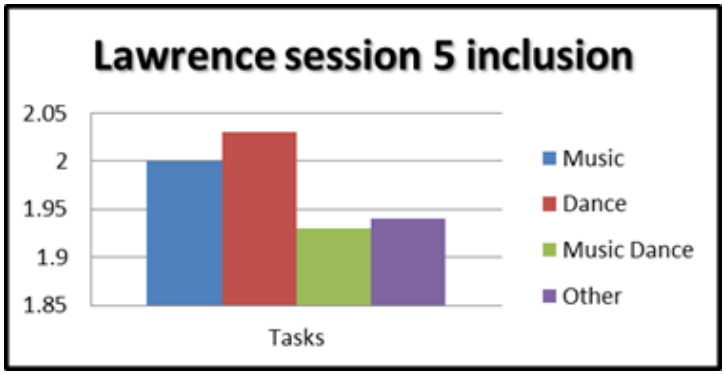
SESSION 5- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
		I wait and he does not repeat it so I move one and I try to speed up the narration of the story and move onto the next task.			
19'30''- 19'50''	**Music** part of Task of session	Lawrence recognises that the song is from Toy Story film and he is the first one to say it as soon as he listens to the first tune.		All cheer up when they hear the song. On task.	*Familiar song (personal interest-favourite?) confidence- first to call out*
20'- 23'	**Dance** Demo of weekly task	Lawrence seems excited, waiting to see what will happen next. He is on task throughout demonstration of the task.		I stop the music in order to explain how to perform the task. They help me to tidy up and put the props away. They are on task when I physically demonstrate apart from Yun.	*Excited – (due to choice of song?)*
23'10''- 25'	**Other** description of task	Lawrence is waiting patiently but then is influenced by peers who are off task.		Everyone goes off task playing with the props and cameras.	*Copy negative behaviour*
25'10''- 26'10''	**Dance** Session task w/o music	On task and included in the group.		They stand up and we start first without the music, all being on task.	*Movement and anticipation for song*

SESSION 5- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
26'20''-27'10''	**Music & Dance** Task of the week	Lawrence is doing half of the moves and missed the first part that needs to find a partner to hug but then joins in and responds very well for the rest of the song.		All on task, perform well the first part of dance routine and follow rules of task.	*Engaged- missed first part- difficult dance routine to remember*
27'20''-27'50''	**Other** Transition before repeating task		He goes off task when the music stops.	The children are waiting for me to put the music back on, looking for partners	*Transition – no music or movement*
28'-28'50''	**Music & Dance** Task of the week	We repeat the task again and although again he does not join in with the movement routine at the beginning of the song, he joins in with the rest of the activity.		All on task and engaged throughout the task.	*Engaged- missed first part- difficult dance routine to remember*

6.5.5.2 Spatial proximity- inclusion/ ASC/ Non ASC participants

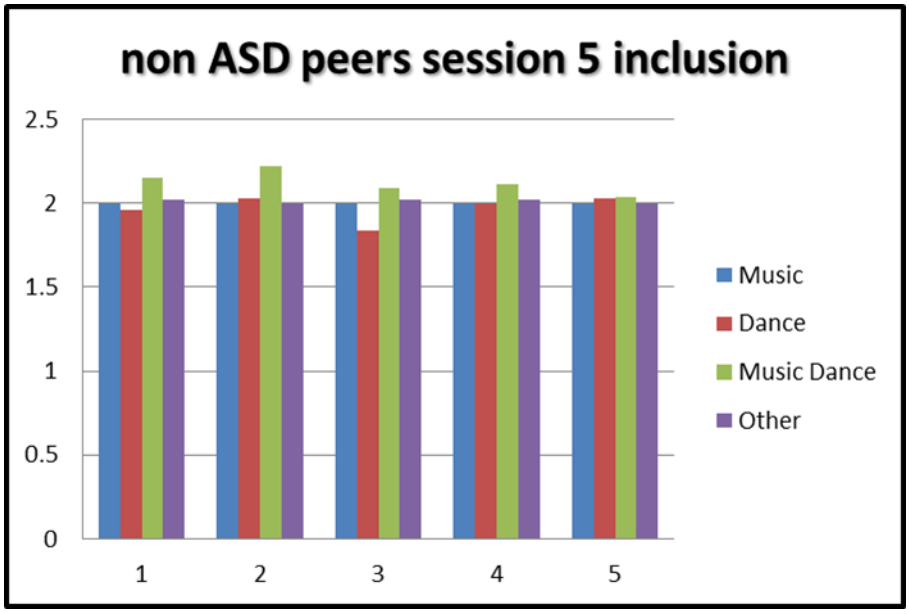
As we can see in the Figures 6.5.5.3 and 6.5.5.4 below, there are some interesting differences between the scores of Lawrence, the boy with ASC, and his peers in terms of their spatial proximity and inclusion in the group. Lawrence is significantly more included during dance followed by music compared to music and dance tasks as well as other. On the other hand, in the second chart we can see that although music and dance comes first there are little differences between the four tasks by all children. Overall, all children, irrespective of gender, perform really well during this session in both variables.

Figure 6.5.5.3 Lawrence: session 5, Inclusion



Notes N=1, mean score of level of inclusion in session 5 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

Figure 6.5.5.4Neurotypical peers: session 5, Inclusion



Notes N=5, mean score of level of inclusion in session 5 during the different tasks. X represents the tasks (music, dance, music and dance, other) for each participant and y the level of inclusion (3= highest score).

SESSION 5- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC - Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
0'-3'30'	**Other** Story- Intro of session	Lawrence is slightly outside the circle but is turning occasionally to see what is happening in the group.		They are all sitting in a circle playing with the animals.	*Included in group despite being off task, better than previous sessions (same task)*
3'40-4'10''	**Dance** Repetition of task w/o music	Lawrence is included in the group and performs the task nicely with and without the music		All included and work nicely together.	*Included- goes away at times- he is quite fidgety in this session.*
4'20''-9'	**Music and Dance** Repetition of task from session 4	Lawrence is generally together with his peers in this task and is practicing good social skills such as waiting for his turn, keeping appropriate distances but does not initiate physical contact. He goes away and needs prompting to join the line for the last round.		Included and occasionally in contact, seek physical interaction.	

SESSION 5- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC - Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
9'-9'20''	**Other** Transition		Away and off task.	They are running around the room staying closely together apart from Lawrence.	*Transition is difficult (movement-sitting down)*
9'30-10'	**Music & Dance** Song (they add dance part)	He is included in the group trying to copy his peers. Sits seconds later than others.		As soon as I put the song, they sing and dance. They sit down in the circle when the song is in the middle.	*Music helps transitioning*
10'-11'20''	**Music** Song	Lawrence joins the group and they are all sit on the floor in a circle		They are all happy and have calmed down considerably. They sing all together. Included	*Music-engagement and cooperation-inclusion*
11'30''-19'20''	**Other** Story	Lawrence is sitting in the circle with the other participants even though he is mostly off task during the narration. When he says that he wants to go back to class he doesn't reply nor stands up but remains sitting on the floor playing with the props.		All included and joining in.	*Included doesn't leave the group or the room despite his comment (expresses need-indirect request to change task?)*

SESSION 5- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC - Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
19'30''- 19'50''	**Music** part of Task of session	Lawrence recognises that the song is from Toy Story film and he is the first one to say it as soon as he listens to the first tune. Stays with group.		All cheer up when they hear the song. Standing together.	*Familiar song (personal interest-favourite?) confidence- inclusion*
20'- 23'	**Dance** Demo of weekly task	Lawrence seems excited, waiting to see what will happen next. He is included throughout demonstration of the task.		I stop the music in order to explain how to perform the task. They help me to tidy up and put the props away.	*Excited – (due to choice of song?)* *Peers work in a group co-operatively.*
23'10''- 25'	**Other** description of task	He is mainly included in the group. Goes away at times around the room alone or following one of his peers.		Everyone goes off task and away playing with the props and cameras around the room.	*Copy negative behaviour* *Peers now stop acting as a group.*
25'10''- 26'10''	**Dance** Session task w/o music	Included in the group and on task. In contact for a while.		They stand up and we start first without the music	*Movement-physical contact*
26'20''- 27'10''	**Music & Dance** Task of the week	Missed the first part that needs to find a partner to hug but then joins in and responds very well for the rest of the song being included and in contact when required.		All on task, perform well the first part of dance routine and follow rules of task. In contact with peers.	*Movement-physical contact*

SESSION 5- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC - Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
27'20''-27'50''	**Other** Transition before repeating task		He goes away when the music stops.	The children are waiting for me to put the music back on, looking for partners. Included in group	*Transition – no music or movement*
28'-28'50''	**Music & Dance** Task of the week	We repeat the task again and although again he does not join in with the movement routine at the beginning of the song, he joins in with the rest of the activity. He is on task and included as well as in contact with the other participants.		All included and in contact	*Movement-physical contact*

6.5.5.3 Summary of session 5

On the whole, the fifth session was successful for all participants who seemed to enjoy the tasks more and more each week and work together cooperatively. They also became more familiar with each other, the room, the props and myself. Hence, they took more initiative and improvised during activities (adding movement to music tasks) or during transitions even if their actions are off task and sometimes misbehaving.

All assumptions made so far such as the importance of repetition, the barriers presented by the use of verbal language and the benefits of music and dance with regards to motivation, physical contact, spontaneity and self-regulation, are again strongly supported by the findings of this session. However, a new point arose that may be worth mentioning. As already discussed above, the use of props can be beneficial in a story activity as it can arouse interest and promote understanding by supporting visually the verbal context. In addition, props can be used as motivators to encourage the child to engage into a task.

Similar to this strategy of using motivating objects or toys in education tasks can be the one of personal interests and familiar favourites. Lawrence, the boy with autism, clearly became interested and engaged in the task of the week as soon as he heard the tune of the song used in the soundtrack of the movie 'Toy story'. He was the first to recognise the song and call it out; this also gave him pleasure and confidence and appreciation from his peers. It may have been that Lawrence has a particular interest for movies or cars or both; and knowing this could allow

devising movement games, stories, and character names based on the favourite theme or movie of the child. This can be extended in all areas of the curriculum.

On the other hand, it derives from the analysis so far that movement tasks offer opportunities for physical proximity and appropriate physical contact between participants. In fact, our participant with ASC has been more included during the tasks that involve dancing. In this particular intervention, dance routines were specifically created in half of the sessions (2, 3, and 5) to promote physical contact. However, all routines can be executed without any contact in order not to put pressure on any participant who might not tolerate touch (as we have seen in chapter 2 individuals with autism may be hypo- or hyper- sensitive to touch and thus seek or avoid it). These routines were performed firstly without and then with music in the three sessions and repeated in the ones that followed. It may be worth examining whether Lawrence was more included in those particular dance tasks or not, compared to the other sessions. And therefore whether pre-designing routines that encourage physical movement within the task affects the spatial proximity/inclusion scores.

Session 5 consisted of a range of activities and offered opportunities for co-operation, physical contact and practicing skills such as start and stop, move in time to music and explore musical instruments. The song used for the task was highly motivating especially for the child with autism, who recognised it and was then more eager to see the task and join in. Therefore, it appears that using the interests of children with autism and incorporating them into the teaching material and process can enhance motivation and engagement. Those interests could be anything from favourite activity (water play, cooking, computer), to favourite toy

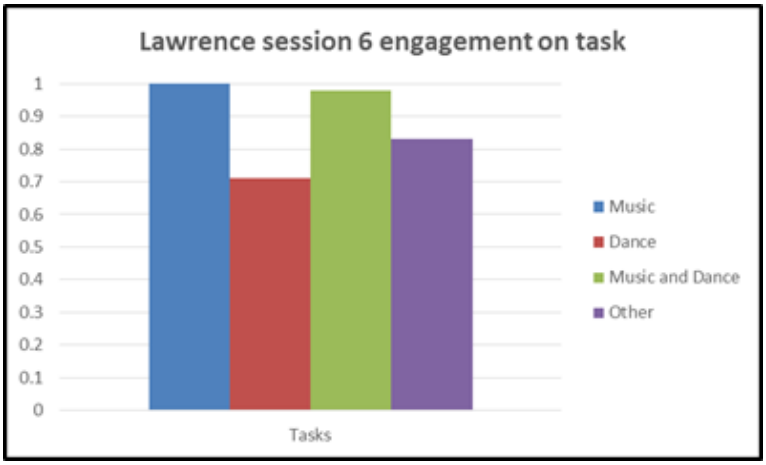
(cars, trains, light toys) or particular hobby, character (football, movie characters). According to Dunst et al. (2012), integrating the interests of young children with ASC into early interventions has positive outcomes on their communication and social interactions with others.

6.5.6 Session 6

6.5.6.1. Engagement on task

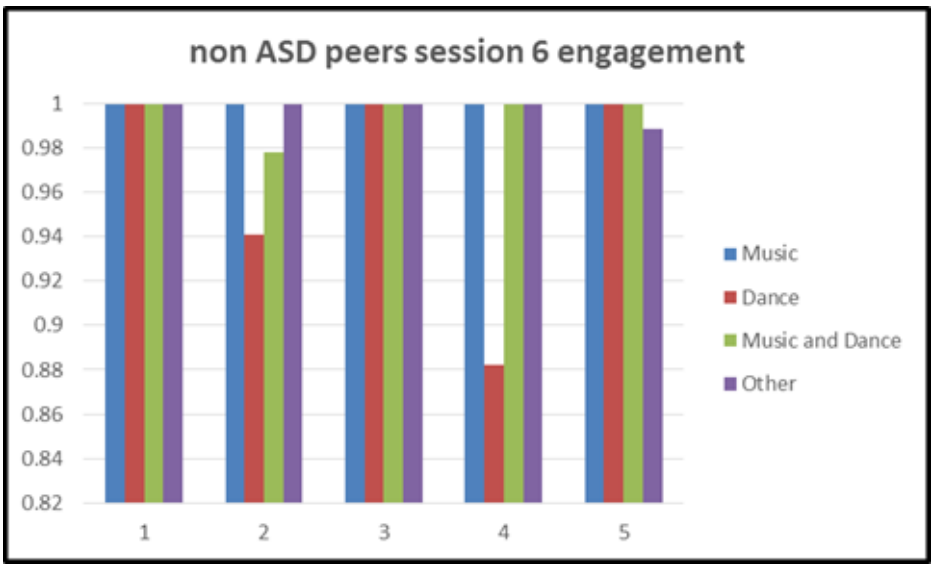
The last session of the intervention programme took place in the classroom and the second half of it was slightly less structured compared to the previous sessions. As we can see in the Figures 6.5.6.1 and 6.5.6.2 below Lawrence once again scored highly on the music variable and was on task achieving the highest score. Then follows music and dance, other and dance by itself, whose score is considerably lower.

Figure 6.5.6.1 Lawrence: session 6, Engagement on task



Notes N=1, percentage of engagement on task in session 6 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

Figure 6.5.6.2 Neurotypical peers: session 6, Engagement on task



Notes N=5, percentage of engagement on task for the five pupils in session 6 during the different tasks. X represents the tasks (music, dance, music and dance, other) for each participant and y the percentage of engagement.

His peers showed more or less similar results. Three participants achieved the highest scores in all tasks on the engagement variable and the other two score high on music and music and dance whereas in dance by itself score the minimum. The analysis of behaviours on the detailed table below helps explore the reasons for the low scores in dance during this last session.

SESSION 6- ENGAGEMENT ON TASK					
Time	Activity	ASC – On task	ASC- Off task	Non ASC participants	Interpretations
0'-2'	**Other** Story- Intro of session	The last session of the intervention, in the classroom this time, starts in a circle. Lawrence went for the penguin first thing and then to my surprise takes initiative by picking up the map and saying *'last week we did the fruit'.* He occasionally goes off task.		The rest of the group then adds the rest of the details of the story.	*For the first time during the program shows awareness of the story and its plot and joins in being engaged from the start of session. Maybe needed a few sessions to become familiar or gain confidence?*
2'10''- 2'30''	**Music** Repetition of task from session 5 demo	Lawrence recognises the song from session 5 and is happy and engaged.		They remember as soon as I put the song on.	*The song used in session 5 has still got a powerful effect*

SESSION 6- ENGAGEMENT ON TASK					
Time	Activity	ASC – On task	ASC- Off task	Non ASC participants	Interpretations
2'40''-4'10''	**Other** Repetition of task from session 5 w/o music	He is trying to follow the conversation regarding the task and its rules. He seems impatient to start, is the first to stand up. Goes off task for a few seconds.		I stop it to go over the rules once. They remember what they need to do and stand up to start the task.	*Language*
4'30''-6'20''	**Music & Dance** Repetition of task from session 5	Lawrence actively participates more this time and is also initiating the contact action instead of waiting from the others like he did in the previous session. He only goes off task for a few seconds but soon joins in and hugs different children as well. Not sure if he sings along.		They are all on task and also sing	*Music, movement, song, repetition of task → success of task and engagement for all participants*
6'30-7'20''	**Other** Story	Lawrence is very interested and engaged in activity, joins his peers.		We then sit back in the circle for the end of the story. They go to look for the music box.	*Short language section* *Physical element within story task*

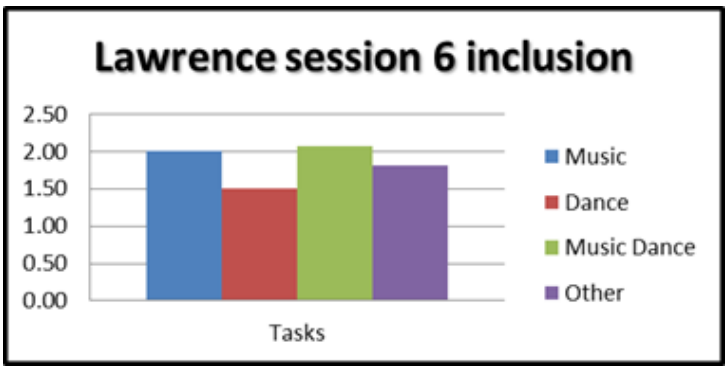
SESSION 6- ENGAGEMENT ON TASK					
Time	Activity	ASC – On task	ASC- Off task	Non ASC participants	Interpretations
7'30-10'	**Music** Musical box	He looks at the music box with enthousiasm and wants to hold it and explore it. I remind him to wait for his turn.		All engaged and working well together. Turn-taking	*Musical prop*
10'10''-11'20''	**Other** Story riddle	Lawrence is still playing with the music box while the others are trying to solve the riddle. He leaves the penguin down. At times, he seems on task doing good eye contact.		All engaged trying to find the word that will solve the riddle	*Language*
11'30''-12'	**Music** Musical box	Lawrence becomes interested again when we open the music box so that everyone can have a chance to see it once more		The children were happy to explore the box again and at the same time trying to solve the riddle	*Musical prop*
12'-18'	**Other** End of story	Lawrence is joining the group to see what is in the chest and takes the small gifts. Lawrence takes them to the table but then joins the group.		They are all on task. They all play with the gifts and choose their masks and stickers.	*Variety of props, little language*

SESSION 6- ENGAGEMENT ON TASK					
Time	Activity	ASC – On task	ASC- Off task	Non ASC participants	Interpretations
18'10''-18'40''	**Music & Dance** Final dance-free	Lawrence is joining in by jumping around.		I put the song on and they dance freely	*Music and movement*
18'50''-20'10''	**Other** Monkey task	Lawrence is mostly on task, trying understand the instructions for the task. He is motivated and copies peers when uncertain of what he needs to do.		All on task and engaged.	*Verbal instructions-short task no sequence.*
20'20''-21'50''	**Dance** Preparation for musical chairs	Lawrence approaches. He seems to know the game but is confused by everyone being so loud. Is motivated and interested to see task. Copies peers setting up and moving around the room, practicing without music.		Then they bring chairs to play musical chairs.	*Movement*
22'-24'40''	**Music & Dance** Musical chairs game	He is fully on task when the music starts. He was the first one to be out so I ask him to come and help with the music but instead goes to play again. I have to remind him that he is out.		Everyone is joining actively.	*Music - fully engaged*
24'50''-26'	**Dance** Transition movement games		Lawrence is away again during the transition playing with the camera.	The children start dancing freely during transition from one movement game to the next. On and Off task	*Unstructured and unplanned task Cannot follow peers, not sure what is happening*

SESSION 6- ENGAGEMENT ON TASK					
Time	Activity	ASC – On task	ASC- Off task	Non ASC participants	Interpretations
26'10''-28'10''	**Music and Dance** Musical statues	Lawrence joins the group as soon as the music starts playing. He is the first one out of the game		They are all on task, happy and engaged.	*Music- motivator to join*
28'20''-29'	**Other** end of session	On task. Helps to tidy up, copies peers.		All on task, help to tidy up, say good bye and thank you	*On task after music and dance task*

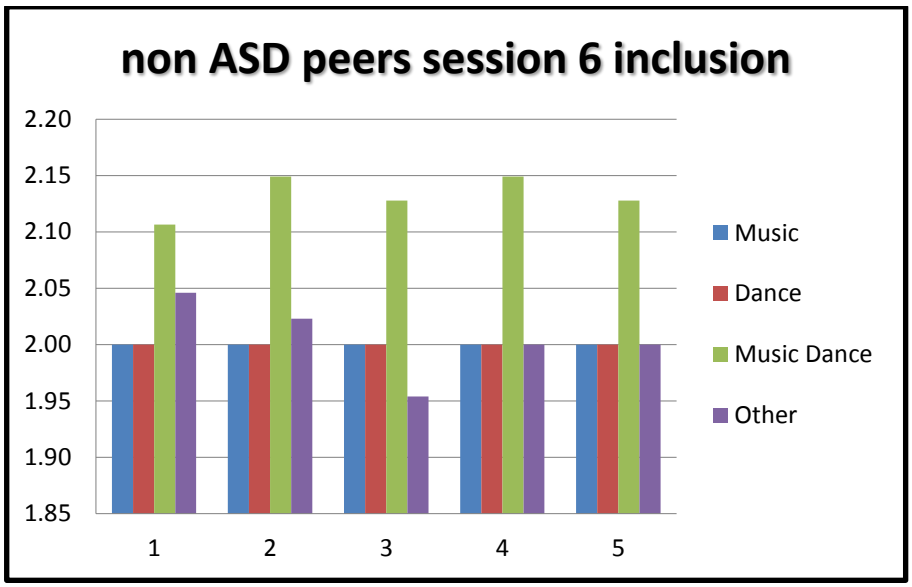
6.5.6.2 Spatial proximity/ Inclusion ASC participant

Figure 6.5.6.3 Lawrence: session 6, Inclusion



Notes N=1, mean score of level of inclusion in session 6 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

Figure 6.5.6.4 Neurotypical peers: session 6, Inclusion



Notes N=5, mean score of level of inclusion in session 6 during the different tasks. X represents the tasks (music, dance, music and dance, other) for each participant and y the level of inclusion (3= highest score).

As we can see in Figures 6.5.6.3 and 6.5.6.4 above, during the last session of the intervention all participants were more included during the music and dance tasks. For Lawrence, the boy with autism small differences are noted between his scores. As far as the rest of the group is concerned, music and dance score outweighs all other task variables, which more or less depict similar scores. It is also interesting

to mention that Lawrence is also more included during the other task compared to dance and overall in this last session he was more engaged and included during other tasks.

SESSION 6- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
0'-2'	**Other** Story-Intro of session	Lawrence is included in the group throughout the story part and at some occasions initiates physical contact with his peers. He is also mostly on task.		Everyone included and occasionally in contact sitting closely together in a circle.	*Included and on task (compared to previous sessions) Repetition of sessions*
2'10''-2'30''	**Music** Repetition of task from session 5 demo	Lawrence recognises the song from session 5 and is happy, engaged and included on the group.		They remember as soon as I put the song on. Everyone on task and included.	*The song used in session 5 has still got powerful effect*
2'40''-4'10''	**Other** Repetition of task from session 5 w/o music	He is trying to follow the conversation regarding the task and its rules. He seems impatient to start, is the first to stand up. Goes away for a few seconds.		I stop the music to go over the rules once. They all work nicely together.	*Language*

SESSION 6- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
4'30''-6'20''	**Music & Dance** Repetition of task from session 5	He is included in the group for the whole time of the task, interacting and dancing with his peers despite going off task for a few seconds. He initiates the contact action instead of waiting from the others like he did in the previous session.		They are all included, dancing and also singing.	*Music, movement, song, repetition of task → success of task and physical contact, cooperation for all participants*
6'30-7'20''	**Other** Story	Lawrence is sitting in the circle with his peers listening to the end of the story and then stays with the group, included and in contact when they go looking for the hidden music box.		We then sit back in the circle for the end of the story. All included and work as a team to find the box.	*Short language section* *Physical element within story task*
7'30-10'	**Music** Musical box	He looks at the music box with enthousiasm and wants to hold it and explore it. I remind him to wait for his turn. Sat at all times with peers.		All included and working well together. Turn-take and include Lawrence, allow him more time with the box that he likes.	*Musical prop*
10'10''-11'20''	**Other** Story riddle	Lawrence is still playing with the music box and does not participate in the current activity. He is sitting with the group but goes away at times.		All work together trying to solve the riddle.	*Language*

SESSION 6- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
11'30''-12'	**Music** Musical box	Lawrence becomes interested again and joins the group when we open the music box so that everyone can have a chance to see it once more		The children were happy to explore the box again and at the same time trying to solve the riddle.	*Musical prop*
12'-18'	**Other** End of story	Lawrence is joining the group to see what is in the chest and takes the small gifts. Lawrence takes them to the table but then joins the group.		They are all included. They all play with the gifts and choose their masks and stickers.	*Variety of props, little language*
18'10''-18'40''	**Music & Dance** Final dance-free	Lawrence is joining in by jumping around staying close to this peers.		I put the song on and they dance freely together in a big circle.	*Music and movement*
18'50''-20'10''	**Other** Monkey task	Lawrence is mostly included in the group but not actively engaged. He goes away at times but then joins in the group again.		All on task and included.	*Verbal instructions-short task no sequence.*
20'20''-21'50''	**Dance** Preparation for game.	Lawrence approaches. He is motivated and interested to see task and join in. Copies peers setting up the room, practicing without music.		All together bring chairs to play musical chairs. They help each other.	*Movement*

SESSION 6- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
22'-24'40''	**Music & Dance** Musical chairs game	He is included in the group when the music starts. He was the first one to be out so I ask him to come and help with the music. Instead he stays near the group copying the walk of his friends.		Everyone is included, they play nicely, moving around respecting each other (gentle movements).	*Music-included [in these games, children with ASC/SEN are the first to come out often- failure non achieving]*
24'50''-26'	**Dance** Transition movement games		Lawrence is away again during the transition playing with the camera.	The children start dancing freely during transition from one movement game to the next. Included and excluded.	*Unstructured and unplanned task Cannot follow peers, not sure what is happening*
26'10''-28'10''	**Music and Dance** Musical statues	Lawrence joins the group as soon as the music starts playing. He is the first one out of the game but does not go away.		They are all included, happy and engaged.	*Music- motivator to join*
28'20''-29'	**Other** end of session	Included. Helps to tidy up, copies peers.		All together help to tidy up, say good bye and thank you	*On task after music and dance task*

6.5.6.3 Summary of session 6

The last session was successful overall and all the participants were engaged and included in the tasks. It is surprising to see that at the beginning of the session, Lawrence, the boy with autism, took initiative and was enthusiastic about starting the narration of the story. For the first time in the program he showed awareness of the plot of the story and some interest in what will happen in the end. This could be due to the fact that a certain number of sessions and tasks is required in order for the child to become familiar with the leader of the group, the setting, the other members of the group and the activities themselves. As we have seen in previous sessions but will also examine further in this chapter repetition of tasks seems to promote understanding, engagement and cooperation within the group, especially when the task is accompanied with music and/or movement. In addition, throughout the program, when a music and/or dance task preceded the story variable, the children and especially Lawrence, were more engaged. However, in this last session, for the first time, the participant with autism seems to be so actively engaged in the story part at the beginning of the session.

Another new point arising from this session's analysis is the 'exclusive' character of common music games such as musical chairs and musical statues. As we noticed in this session, in these games children with ASC or disabilities are usually the first to come out or loose. This can contribute to low self-esteem and confidence and thus lead to exclusion from peers. It is worth examining whether this is the case with other groups in the intervention and if it happens with other similar children's games. The tasks designed so far in the current program have a

more inclusive character and results and are fun and easy to follow by all professionals and children.

6.6 Conclusion

Overall, throughout the programme, Lawrence was more engaged when a task involved music and more included in the group when the task involved dance. Tasks combining music and dance were also found to promote engagement and spatial proximity for all participants.

Chapter 6 consisted of the first case study and provided a detailed analysis of the intervention sessions in relation to the main variables of the quantitative observation: engagement on task and inclusion. Each session consisted of charts with the scores of the participants and with tables presenting in detail the interactions between children and their levels of engagement throughout the session. Main findings were discussed at the end of each session analysis.

The intervention programme that took place in this school with a Y1 group was the first in this research study. It was used as a pilot in order to try out the music/ dance activities, the story as well as the different equipment used including the cameras. On the whole, all sessions run smoothly and participants were engaged during the intervention Levels of engagement were high especially during music and dance tasks and all pupils worked well together. Chapter 7 consists of the second case study with the older pupils of the whole programme (Y3) and a pre verbal girl with autism participating in the group.

Chapter 7 Case Study II

7.1 Introduction

Chapter 7 consists of the second case study in this research study and follows the same structure as the previous chapter. It presents the findings focusing on engagement and inclusion for each session of the intervention programme. The second case study differs from the first in a number of respects, mainly relating to the participants. Whereas in the first case study the autistic participant is a verbal, high functioning 5-6-year-old boy, in the second the child with autism is a pre-verbal girl attending a Year 3 class (7-8 year old) who requires 1-1 adult support throughout the school day.

7.2 Background of school/group

The second school to participate in the study was a small catholic junior school. The school, according to the information pages and policies found on the website, is committed to achieving a positive, caring ethos in which understanding and mutual respect are fostered. Positive relationships, self-esteem, acknowledgement of the gifts and needs of each individual, and the unique contribution each person can make to the community are values promoted by the school. The school promotes the idea of equal opportunities for all pupils through all aspects of curriculum planning, delivery and monitoring, so that they can achieve their fullest potential. Equal opportunities principles are fundamental to education provision and should, therefore, permeate the curriculum at all levels throughout the school. Policies have been developed in school which positively counter discrimination based on race, gender, class, disability and other forms of discrimination.

In accordance with the School's Special Educational Needs Policy the school is committed to providing all pupils with the broad, balanced and differentiated curriculum to which they are entitled. All staff are responsible for identifying and assessing each pupil's needs and for determining strategies for meeting these needs. For the most part this will be achieved through normal classroom organisation providing a range of levels of tasks within the general framework of the National Curriculum. In some cases, pupils may require additional help or support to be able to progress satisfactorily and to gain full access to the curriculum. A Special Needs Co-ordinator, is responsible for co-ordinating this provision and ensuring with teachers and parents that an individual education plan is drawn up. If necessary, in consultation with parents, outside agencies will become involved in the assessment and advise on provision for the child's needs.

The group selected to participate in the research programme is from a Y3 (aged 7-8) class and consists of 2 boys and 4 girls (one with ASC). One girl only attended that last two sessions as she was away from school for a long time due to medical reasons (hearing impairment). The intervention programme took place on Thursdays in the afternoon after lunch as a special playtime club when the rest of the class were in the playground. The sessions were run in a spacious room besides the music room and location was consistent throughout the programme. Some sessions started a bit later as the children hadn't finished their lunch and they were coming one by one at the room. The SENCO or the girl's 1-1 learning support assistant was present during the intervention programme.

Rosie was the child with ASC that participated in the intervention programme. The girl was fully included in the classroom and had a 1-1 learning support assistant in

the areas of the curriculum. Rosie is a non-verbal girl and in general very quiet and loved by her classmates. She loves music and dance and parallel to the programme she was engaged in a short song-dance routine, which the other girls of the group showed her during playtimes. Rosie requires continuous adult support to access the curriculum throughout the day.

7.3 Observation profile/ behaviours checklist

7.3.1 Pre-intervention

Prior to the intervention programme, I had a meeting with the SENCO and the mother of the girl with autism who participated in the study, to discuss the content and goals of the intervention. I also had the opportunity to observe Rosie and then completed the observation checklist together with the SENCO and Learning Support Assistant working with Rosie. We rated the observed behaviours of social interaction, which were divided into the following categories: spontaneous use of gaze, spontaneous maintenance of proximity, imitation, turn taking, initiating, emotional expression and understanding and finally social behaviour and play. Under each category there were 4-8 behaviours that the teacher had to rate using the following key: N= not present, I=indifferent, D= developing, F=fluent. The checklist was completed for all pupils with autism participating in the study and further analysed in the case studies, as also presented in chapter 6.

According to the observation profile and checklist, Rosie is pre-verbal and uses body language to communicate her needs. She will look at the adult to request what she wants and will take them to the object. She is beginning to follow eye gaze and to eye contact while simple interaction. During play, she does not clearly use eye contact to request repetition of action or song. Rosie responds well to

physical proximity. She allows adults and children to sit/play alongside and with her and responds to friendly handling.

Rosie has got good imitation skills and can copy gestures and actions on cue. She can take turns in simple games and activities with an adult or another child. Rosie can greet familiar adults but has difficulty in initiating simple interactions with an adult or peer. She may recognise basic facial expressions (happy, sad, angry face) but will not imitate those or respond to them appropriately (i.e. respond to a smile with a smile). In terms of her social behaviour, Rosie explores the properties of toys and can share toys and objects with her peers. However, she will not actively choose playmates or friends.

7.3.2 Post intervention

Table 1 below shows the pre and post intervention ratings for some behaviours selected that were marked as 'indifferent' or 'not present' in the initial assessment. It also gives some indicative examples of the behaviours recorded during the open observation process of the videoed sessions which reflect the areas in which Rosie has made considerable progress according to the ratings given by her class teacher.

Table 7.1 Observation Checklist

Observed behaviours	Pre	Post	Session and description
Looks at adult to prompt the repeat of an action, game or song	Indifferent	Fluent	Session 1: *looks at me to continue fast colouring.* Session 2: *holds my hand and looks at me to start movement task.*
Imitates simple facial expressions e.g. smile, grimace.	Indifferent	Developing	Session 4*: Rosie copies her peers smiling*

Shows/offers object/activity to an adult	Indifferent	Fluent	Session 3: *starts dancing, showing me her moves, peers copy her.*
Shows/offers object/activity to a child	Indifferent	Fluent	Session 3: *starts dancing, showing me her moves, peers copy her.*
Will spontaneously approach adult when in need of help	Indifferent	Fluent	Session 5*: she comes near me to help her take the toys out of the bag*
Will initiate a simple game with adult	Indifferent	Fluent	*No strong evidence in the programme. Rosie would respond but not really initiate. Her LSA reported that Rosie would initiate some movement games with her after the sessions or the next days.*
Will initiate a simple game with a child	Not present	Fluent	Session 4: *she starts a game with the tunnel and props, holds Ebony's hand and looks at them, peers follow.*
Can respond to a smile with a smile	Indifferent	Developing	Session 3 & 4: *her peers smile and laugh and she responds with same expression, joins with their laughter*
Chooses best friends	Indifferent	Fluent	Session 3, 4, 5 and 6: *she would choose partners for tasks.* *LSA reported that at playtimes she would approach the girls from groups to play/dance hokey pokey.*

7.4 SENCO's feedback

The SENCO was present during the sessions and was taking notes after each session. I was made aware of this at the end of the intervention programme when she gave them to me. Her notes will be presented at the beginning of the summary section of each session's analysis in *italics.*

7.5 Intervention sessions

Similarly to the first case study presented in the previous chapter, detailed analysis of each session is presented in this section. The analysis consists of charts and tables that will generate the main findings. The charts produced by the quantitative analysis of the structured observations show the scores of the child with autism by task (see chapter 3 and 5). The tables illustrate the dominant behaviours during the tasks throughout the session in order to explain what was happening and why the child with ASC was on/off task and included/excluded.

The focus is on how the children performed in each task and on what factors might have contributed to these scores. Comparisons are also drawn between the non-autistic participants and the child with autism. This specific group consisted of 4 girls (including the girl with autism) and 2 boys. In the tables below, children 1, 2 and 5 are girls and 3 and 4 are boys.

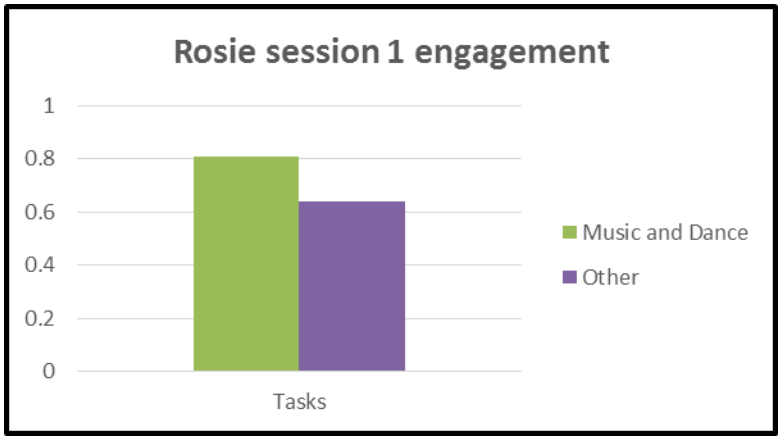
7.5.1 Session 1

7.5.1.1 Engagement on task- ASC/ Non ASC participants

During the first session, Rosie scored higher in the 'music and dance task' and then during 'other'. No score was recorded during the 'dance' task as Rosie was out of the room (see Figure 7.5.1.1). All non-ASC participants, as shown in Figure 7.5.1.2, were engaged throughout the session scoring the maximum '3' in all the tasks. One girl was not present in this session. Although her peers were fully engaged throughout the session, Rosie scored also very well taking into account

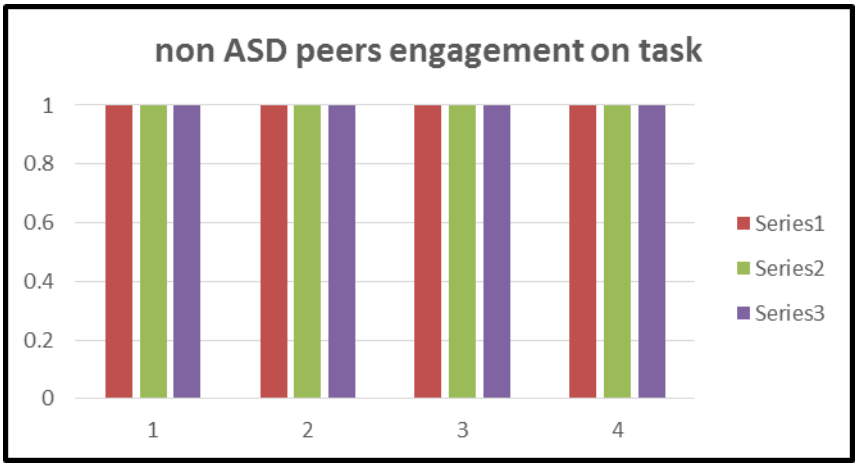
that it was the first session and it was very new to her and a change from her usual routine.

Figure 7.5.1.1 Rosie, session 1: engagement on task



Notes N=1, percentage of engagement on task in session 1 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

Figure 7.5.1.2 Neurotypical peers, session 1: inclusion



Notes N=4, percentage of engagement on task for the four pupils in session 1 during the different tasks. X represents the tasks (music, dance, music and dance, other) for each participant and y the percentage of engagement.

SESSION 1- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
0- 5'30''	**Other** Intros of staff and children - programme outline	Rosie has not arrived yet		The SENCO explains to the group who I am and talks to them about the programme. We then all sit down and introduce each other and the children talk to me about their day so far while waiting for Rosie. They are all sitting nicely, taking part in the conversation and ask a lot of questions. They are all happy and smile.	*The SENCO talks about the children and about their special qualities and talents, which is very positive and encouraging. She stresses how they were especially chosen to take part in this fun lunchtime club.* *Praise, reward-confidence-active engagement and excellent behaviour.*
5'40''- 7'20''	**Dance** Fingers movement game	Rosie has not arrived yet		They are all on task and enjoy the game. All participating actively with movement and sounds/words.	*Age group- better concentration/behaviour?*

SESSION 1- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
7'30''-7'50''	**Other** Transition – Rosie comes in the room	Rosie comes in and the SENCO tells her that I am a friend of her teacher and that we are going to have lots of fun together. Rosie is non-verbal and very quiet. She comes and sits next to me in the circle.		Everyone greets Rosie and stay in the circle. Engaged through transition.	
7'-9'50"	**Other** Story Narration with props	I start narrating the story and R is quite fidgety and does not do any eye contact. She is looking around the room but then becomes interested in the stuffed toys.		All the children seem very happy and excited.	*Verbal language-seems unsure of what is happening or new room? Props help gain interest*
10'-12'	**Other** Story monkey task	I describe the characteristics of the animals as required by the task. Elsa prompts Rosie to choose but says: *'Monkey?'* (Rosie went for the monkey originally anyway). She plays with the toy and is very smiley and happy.		The children choose their favourite animal. Everyone is engaged and participating actively	
12'-13'	**Other** Story-map-transition	Rosie looks at the map and seems engaged. She is following me with her gaze when I stand up and go to the other side of the room to bring the masks for colouring.		Everyone is on task, they ask questions about the map and the story and help build the plot.	*Visual aid (map) supporting verbal language promotes engagement*

SESSION 1- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
13'-24'30''	**Other** Colouring masks	Rosie is colouring her mask but stops and looks around, plays with the toy. She says *'pink'* and continues to colour. She is looking at me and when I start colouring she copies me maintaining eye contact. She stops frequently to see what I am doing but then continues to colour. Rosie continues to copy me while I do it faster and I prompt her to use different colours. She is smiley and looks at me, Elsa and the SENCO. She wants to stand up and starts moving on the spot but stays sitting on the floor and starts sharpening the pencils. I ask her about the mask but does not engage in interaction. I move to the other side to help Adam and Peter. She is looking at me and then again at Elsa and the SENCO.		They choose their masks and start colouring. The group is quiet, well behaved and focused.	*Art activity is motivating* *Finds it difficult to sit down for so long* *Tries to understand by looking at what her peers are doing. Seeks approval through eye contact*
24'40-27'30''	**Other** Transition between activities		We put away the masks but Rosie is still colouring. The rest of the group stood up and went by the window. R	They are on task, tidy up the masks and art materials and move to the other side of the room to start the music and	*Wants to finish task?*

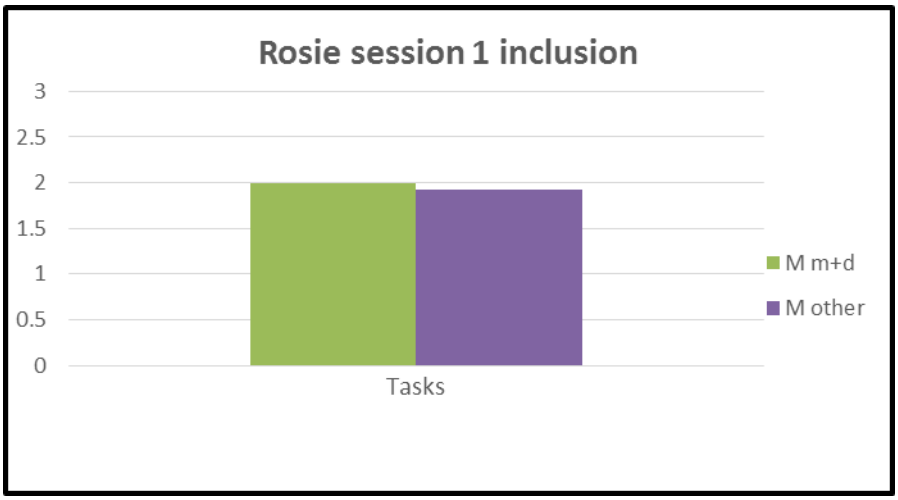
SESSION 1- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
			did not follow.	dance task.	
27'40'' -31'	**Music and Dance**	Rosie is the first one to stand up whereas everyone else is still sitting on the floor. Rosie moves away, finds a chair and sits there. The SENCO takes the chair and guides her where we all are. Rosie looks at her peers lying on the floor and then follows my physical and verbal prompt and lies down copying us. She stands up and goes very near the speaker looking with curiosity and then looks at the other children. She is stretching her arms and then plays with the monkey. Rosie is looking again at the speakers and is moving on the spot. She seems very curious about everything in the room and starts moving around the room, watches the others carefully and copies them. She has a very light beautiful movement and is very flexible. She then sits down and Elsa tries to re-engage her. She copies the lion seconds later and then the giraffe.		I explain the task (animals sleep, wake up to the music, imitate animals walk). They are lying on the floor pretending to be asleep. When the music starts, Elsa is the first one to wake up, then Ebony and then the boys. All children are on task, making animal moves.	*Very inquisitive, wants to copy and follow others, waits and then copies, natural movement- mirrors movements, creates own.*
31'- 33'30''	**Other** Story	Rosie is looking around still but she is less fidgety and does better eye contact.		We hold hands all together, make a circle and then sit down. Everyone is on task.	*Music and dance- calming effect-improve attention and concentration- contact*

SESSION 1- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
				They ask me about next week and Rosie moves away and goes off task. They clap at the end to thank me.	*with others- sense of belonging in the group*

7.5.1.2 Spatial proximity - ASC/ Non ASC participants

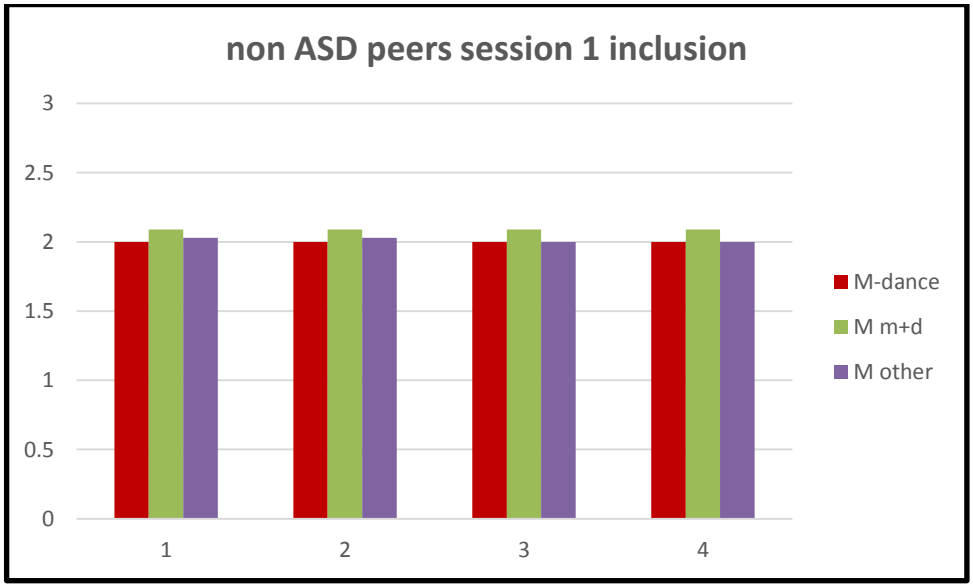
In this session, we notice small differences in scores in terms of spatial proximity/physical contact and inclusion. Rosie is slightly more included during music and dance compared to 'other' whereas similar scores are achieved by her peers (see Figures 7.5.1.3 and 7.5.1.4). Interestingly, there is a coherence and homogeneity in scores between all participants.

Figure 7.5.1.3 Rosie, session 1: inclusion



Notes N=1, mean score of level of inclusion in session 1 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

Figure 7.5.1.4 Neurotypical peers, session 1: inclusion



Notes N=4, mean score of level of inclusion in session 1 during the different tasks. X represents the tasks (music, dance, music and dance, other) for each participant and y the level of inclusion (3= highest score).

SESSION 1- INCLUSION/SPATIAL PROXIMITY					
Time	Activity	ASC - Included	ASC- Excluded	Non ASC participants	Interpretations
0-5'30''	**Other** Intros of staff and children - programme outline	Rosie has not arrived yet		Everyone sitting closely together, talking to each other; welcoming and positive attitude.	*The SENCO talks about the children and about their special qualities and talents, which is very positive and encouraging.* *Praise, reward-confidence-self-esteem- feeling of belonging- inclusion*
5'40''-7'20''	**Dance** Fingers movement game	Rosie has not arrived yet		They are included, talking part-giving each other turns and sharing.	*Age, school ethos- inclusion*
7'30''-7'50''	**Other** Transition – Rosie comes in the room	Rosie comes in and the SENCO tells her that I am a friend of her teacher and that we are going to have lots of fun together. Rosie is non-verbal and very quiet. She comes and sits next to me in the circle.		Everyone greets Rosie and stay in the circle.	*Acceptance- Inclusion*

SESSION 1- INCLUSION/SPATIAL PROXIMITY					
Time	Activity	ASC - Included	ASC- Excluded	Non ASC participants	Interpretations
7'-9'50"	**Other** Story Narration with props	I start narrating the story and Rosie is quite fidgety and does not do any eye contact. She is looking around the room but then becomes interested in the stuffed toys. She sitting in the circle but not interacting directly with her peers.		All the children are sitting in the circle and talk t eh other/work well in the group.	*Verbal language-seems unsure of what is happening or new room? Props help gain interest-inclusion*
10'-12'	**Other** Story monkey task	Elsa prompts Rosie to choose but says: *'Monkey?'* (Rosie went for the monkey originally anyway). She plays with the toy and is very smiley and happy. She is copying others and stays near the group.		The children choose their favourite animal. Everyone is engaged and participating actively.	
12'-13'	**Other** Story-map-transition	Rosie looks at the map and seems engaged. She is following me with her gaze when I stand up and go to the other side of the room to bring the masks for colouring. She stays by her peers.		Everyone is included, they ask questions about the map and the story and help build the plot. They work as a team.	*Visual aid (map) supporting verbal language promotes engagement- inclusion.*
13'-24'30''	**Other** Colouring masks	Rosie is colouring her mask but stops and looks around, stays in the group. She is looking at me and when I start colouring she copies me maintaining eye contact. She stops frequently to see what I am doing but then continues		They choose their masks and start colouring. The group is quiet, well behaved and	*Art activity is a strength of R. Finds it difficult to sit down*

SESSION 1- INCLUSION/SPATIAL PROXIMITY					
Time	Activity	ASC - Included	ASC- Excluded	Non ASC participants	Interpretations
		to colour. She is smiley and looks at me, Elsa and the SENCO. She wants to stand up and starts moving on the spot but stays sitting on the floor and starts sharpening the pencils. R is always very near the group and seems comfortable with close proximity. I ask her about the mask but does not engage in interaction. I move to the other side to help Adam and Peter. She is looking at me and then again at Elsa and the SENCO. She stays near the group in extended circle.		focused. All working together sharing and chatting.	*for so long* *Tries to understand by looking at what her peers are doing. Seeks approval through eye contact- self-esteem- belonging*
24'40-27'30''	**Other** Transition between activities		We put away the masks but Rosie is still colouring. The rest of the group stood up and went by the window. Rosie did not follow.	They are on task, tidy up the masks and art materials and move to the other side of the room to start the music and dance task. All together.	*Wants to finish task? Not sure what is happening/ needs time to process- stays away from group*
27'40'' -31'	**Music and Dance**	Rosie is the first one to stand up whereas everyone else is still sitting on the floor. I stretch and I touch her gently at her back, whispering her name. She looks up at me, and stretches imitating me. Rosie is the first one to stand up whereas everyone else is still sitting on the floor. Ebony is holding her hand gently to get her to sit down but Rosie moves away. She finds a chair and sits there. The SENCO takes the chair and guides her where we all are. She		I explain the task (animals sleep, wake up to the music, imitate animals walk). They are lying on the floor close to each other pretending to be asleep. When the music starts,	*Seems comfortable with proximity and touch, Enthusiastic about dance task, wants to move, explore.*

SESSION 1- INCLUSION/SPATIAL PROXIMITY					
Time	Activity	ASC - Included	ASC- Excluded	Non ASC participants	Interpretations
		comes close to me and is looking with interest while I prepare the music. She is still next to me looking at what I am doing while the others are lying on the floor pretending to be asleep. She stands up and goes very near the speaker looking with curiosity and then looks at the other children. Rosie is looking again at the speakers and is moving on the spot. She seems very curious about everything in the room and starts moving around the room, watches the She then sits down and Elsa tries to re-engage her.		Elsa is the first one to wake up, then Ebony and then the boys. All children are on task, making animal moves.	
31'-33'30''	**Other** Story	Rosie is also holding hands with her peers and joins the circle. Rosie is looking around but she is less fidgety and does better eye contact. She moves away.		We hold hands all together, make a circle and then sit down. Everyone is included. They clap at the end to thank me.	*Music and dance- calming effect-improve attention and concentration- contact with others- sense of belonging in the group.*

7.5.1.3 Summary of session 1

Session 1- mask making and movement

Rosie squatted to watch activities. She relied on watching what the other children were doing. She would sometimes respond to prompts from other children to help her colour her mask. When Tina started to vigorously colour a mask, Rosie was alerted by the sound of this and focused on what Tina was doing. She copied Tina by colouring her mask vigorously too. Rosie initially stopped to watch the movement activity (pretending to be animals) and participated when she felt she knew what to do. Rosie did not participate fully (she would stop to watch at times) but the group was a new experience for her to adjust to. Overall, she responded well considering that the project was new to her.

The first session in this group has been really successful with all neurotypical participants scoring the maximum, 3, during in the engagement variables in all the different tasks. Rosie, the girl with autism did also really well, and although not being present during the dance activity she was more engaged during music and dance and then during other.

In terms of inclusion in the group, Rosie was similarly more included during ‘music and dance’ followed by ‘other’. Her peers scored higher during ‘music and dance’, followed by ‘other’ and ‘dance’ on its own.

The scene for a positive session was set early as the SENCO made the introductions at the very start by stressing the children’s special abilities and talents, and explaining how they were especially chosen to take part in this fun lunchtime club. This was a very positive and encouraging start. Overall, taking into account the general performance, behaviour and success of this particular group, as

well as the school ethos we could assume that students feel valued and acknowledged. Praise and reward at this context seem to increase pupils' confidence and self-esteem, which can promote their active engagement in activities and a feeling of belonging necessary for inclusion.

Another element, which might have played a positive role in the success of this session, is the age of the participants. Pupils in this group are in Y3 aged 7-8, factor which may affect their behaviour, concentration skills and engagement. It may be interesting to compare with the other groups especially with the youngest, the ones aged 4 attending Reception.

Verbal language is again found to be a barrier to learning and active engagement and the participants with autism benefit form visual aids and props, which facilitate understanding, support verbal language, promote participation in the activities and sessions and therefore enhance inclusion (see case study 1).

The art activity and movement tasks have also been highly motivating for Rosie. Interestingly, Rosie throughout the session found it difficult to sit down for an extended period of time during the story parts and was seeking opportunities to move. In general, some pupils with autism might find it difficult to sit in a class for long periods of time; they require some space and seek physical activity to burn off energy and be able to concentrate on their tasks (Perepa, 2005). Nevertheless, Rosie during the art task was able to sit down for a longer period of time.

Similarly, this need to move in space, to have movement breaks can be facilitated by using dance as a strategy and as a medium to implement in general teaching. During the session Rosie wanted to move, to explore the space and was enthusiastic about the dance tasks.

Her movement is very natural, soft and playful and likes to mirror others; she waits and copies, follows the movement of others but also creates her own for the others to join in. This can be translated as a means of communication, allowing Rosie to enjoy being with others, expressing her emotions, sharing an experience. It also seems that at different instances during the session Rosie is looking at others for approval. Rosie is also very comfortable with proximity and touch especially during a movement task. Therefore, dance could be used to teach R different skills; social, emotional or academic.

On the other hand, at various occasions Rosie does not follow the group, therefore is away and off task and this could be due to the fact that she may not understand what is going next or may need more time to process the instruction given. Most children with ASC also have difficulty in shifting their attention from one activity to another or want to finish whatever task they are doing (Perepa, 2005).

Finally, music and dance have been found to have a calming effect on children and improve their attention and concentration skills. This is evident as after a music and dance task, the scores of engagement on task are relatively higher for all participants (see also case study 1). Music and dance tasks provide a good opportunity for children to work closely to each other, promote physical contact with others and can therefore create a sense of belonging in the group.

To sum up, the findings from analysing the session in detail are as follows:

- Verbal language as well as following instructions can be challenging for children with autism and the use of visual aids as well as props is beneficial (Mesibov and Shea, 1996).

- Shifting attention and the need to finish each task before moving to the next can be a reason for Rosie to be excluded from the group or off task.
- Props and art complement all activities in the session and can make literacy tasks more motivating for all participants (Crimmens, 2006)
- Music and dance have been found to have a calming effect facilitating engagement and inclusion.
- Praise, reward and school ethos seem to be a paramount factor in shaping good behaviour in children. Interesting to see whether age is an influencing factor as well.
- Dance can be used in the class:

  - to teach social or academic skills, especially to non-verbal children like Rosie

  - as movement break for children with autism who may find it difficult to sit for long periods of time.

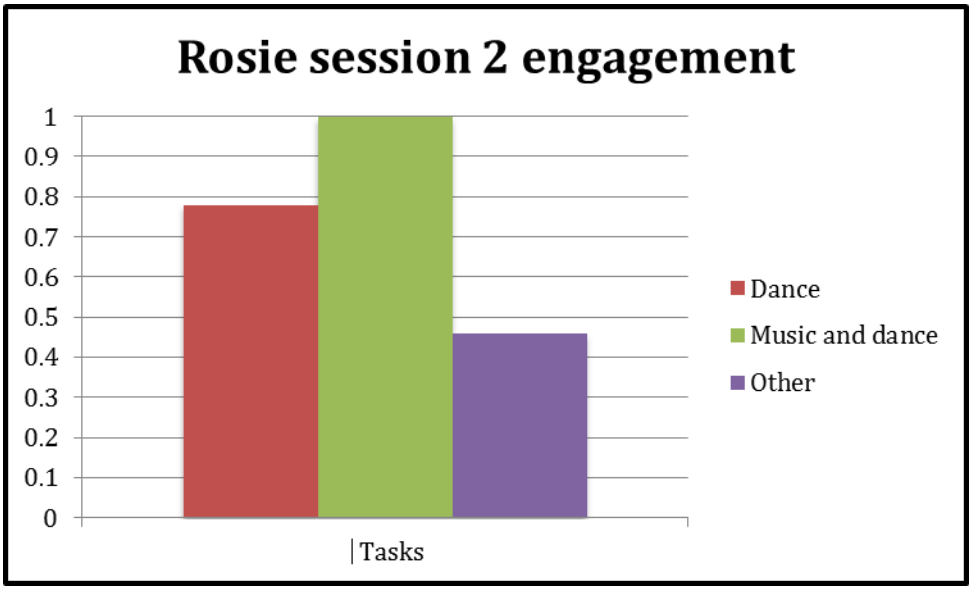
  - a medium to encourage physical proximity and contact with others

  - to boost confidence in a child like Rosie, who is pre- verbal, good at dancing and enjoys communicating this way.

7.5.2 Session 2

7.5.2.1 Engagement on task- ASC

Figure 7.5.2.1 Rosie, session 2: engagement on task



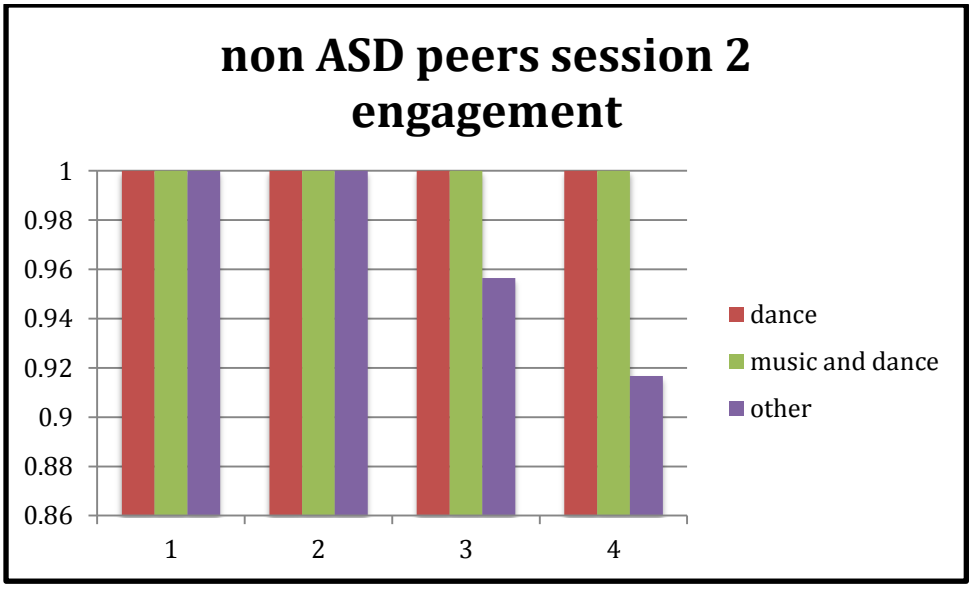
Notes N=1, percentage of engagement on task in session 2 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

As we can see in Figure 7.5.2.1, session 2 is a very successful session for Rosie who scores the maximum '3' in engagement during the music and dance task, followed by a very good score during 'dance' and finally 'other'. It will be interesting to see what the reasons for absolute participation on task are.

7.5.2.2 Engagement on task/ Non-ASC participants

In Figure 7.5.2.2, we can see that the girls (1, 2) score again as in session 1, the maximum in all tasks, whereas interestingly the boys (3, 4) score equally the maximum during 'music and dance' and dance but are considerably more off task during 'other'. One girl is absent from this session.

Figure 7.5.2.2 Neurotypical peers, session 2: engagement on task



Notes N=4, percentage of engagement on task in session 2 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

SESSION 2- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
2'40''- 6'10''	**Dance** Movement game Animals of the story	Rosie has not arrived yet		(walk around the room- I say 'freeze' - stop and make an animal statue, characters of the story - I need to guess). They are doing great, good listening to the music and nice representation of the animals. (find a partner and form a shape when I say freeze') The children are once again very creative with great cooperation and attention skills.	*Enjoy the movement task- engaged and team work*

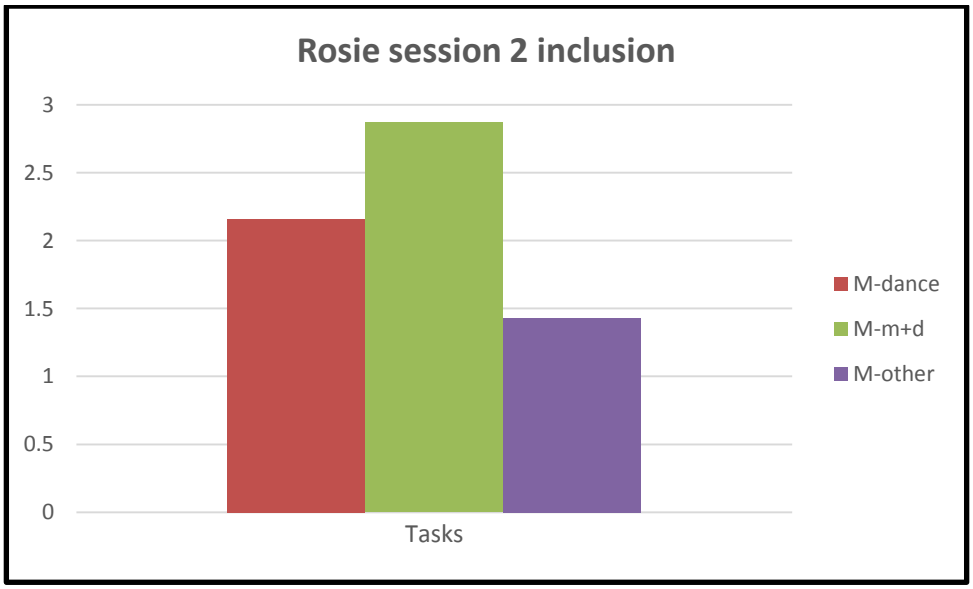
SESSION 2- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
6'20''- 11'10''	**Other** Story	Rosie comes in the room. She is looking around being off task. When I ask her if she is the monkey she looks at me but she is fidgety while still sitting down. When I lift the map up, she comes nearer and seems very interested but goes further away again spinning on the floor and looking around. When I ask her to come nearer, she listens but is making no eye contact and is rocking.		Her friends and I greet her and we all sit down in the circle to start with the story. The rest of the group is trying to find ways to cross the lake in the story.	*Verbal language- off task Props and visuals- motivate*
11'20'' - 14'20''	**Dance** demo of task without music	She is the last one still sitting on the floor spinning. She then stands up and comes near me and holds my hand. Rosie follows Ebony without any prompt or help. She initiates movement and jumps on the stone as required by the task. Rosie is still not holding hands but she is looking with high interest. She is smiley and seems happy and engaged. She goes and stands at the other side of the room when the first round finishes but when I call her she comes near and joins the line. She is very eager to start. She is following me when I go to the other side to put the music on and Ebony comes and brings her back to the line holding her hand.		We stand up; I explain the task and I demonstrate it giving them the instructions and rules that apply to the adventure. Elsa is first then Ebony holding hands and then Rosie. They are all waiting patiently for the music to start	*Quickly picks up the dance task, knows what she needs to do by copying others- engaged, focused, confident*
14'30'' - 16'10''	**Music and Dance** Stones task	Rosie is at the end of the line before Peter. She seems not to understand fully the rules of the task but is happy and fully engaged.		They are all waiting patiently for the music to start and as soon as they hear the piece they start without signal from	*Music and dance task motivating and enjoyable More meaningful compared to story.*

SESSION 2- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
				me. Adam takes the lead this time. They are all doing really well, holding hands all along. We go back to do it again. They are doing really well and are on task and for the whole time. We finish this task and I explain that they need to remember how to perform the task next time.	
16'20'' - 17'	**Dance** Transition without music	Rosie is moving away, seems unsure of what to do but follows her peers who try to re-engage her. She is also dancing, copying her peers during the transition.		Some children are slightly off task, but are having fun. Children keep dancing without my prompt.	*Transitions are difficult, unstructured*

SESSION 2- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
17'20'' -23'	**Dance/ Music and Dance** Music stops but still moving **transitions**	She is mostly on task for the whole time. During transitions, she keeps dancing as do the other children and performs the task with and without music.		We finish this task and I explain that they need to remember how to perform the task next time. They ask to do it over and over again.	*Music and dance or dance itself- motivating, children seek the movement*
23'10'' - 25'40''	**Other** Story and prep for game	We tidy up, Rosie is just looking, and we sit down. She now comes much nearer than before and is looking at the map. She is sitting down still and quiet, maintaining eye contact without fidgeting.		Some of the children are slightly off task.	*They want to dance! Seek movement*
25'50'' - 28'20''	**Dance** Movement game	She is dancing around the room. She has not understood the rules of the game (touch one part of body with partner) but she is moving around involved. Rosie is now following the task with Peter's prompts and assistance. She is still dancing.		She is dancing beautifully the whole time and different peers copy her!	*Movement motivating*
28'30'' -29'20	**Music Dance**	Rosie is performing the movement song with movements (no singing). She jumps and claps.		They show me the hokey cokey in a circle holding hands all together and singing	*Action song-circle- familiar and motivating*

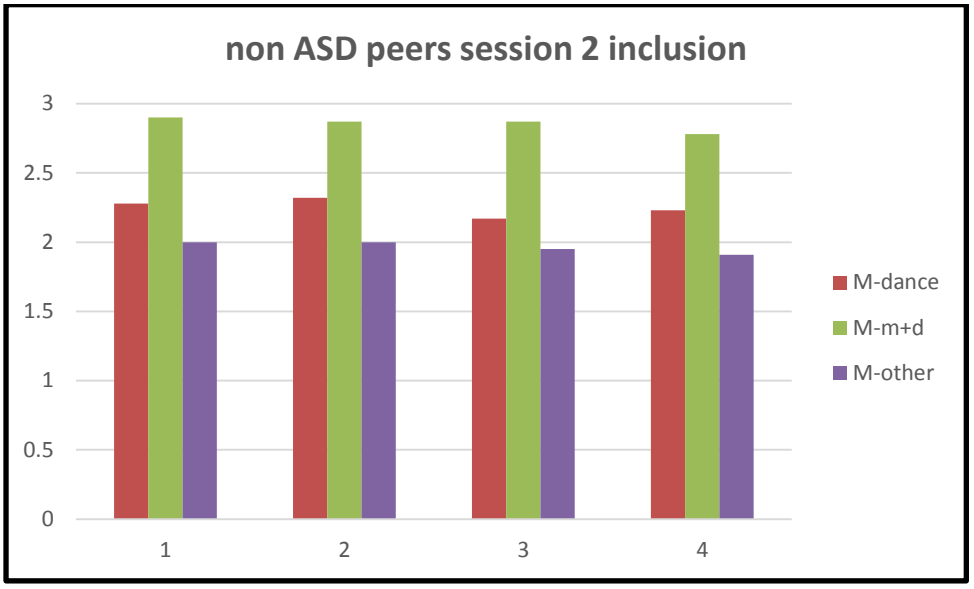
7.5.2.3 Spatial proximity - ASC/ Non ASC participants

Figure 7.5.2.3 Rosie, session 2: inclusion



Notes N=1, mean score of level of inclusion in session 1 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

Figure 7.5.2.4 Neurotypical peers, session 2: inclusion



Notes N=4, mean score of level of inclusion in session 1 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

As we can see in Figures 7.5.2.3 and 7.5.2.4 above, all participants, as it is often the case with the inclusion variable, present an homogeneity in the scores but this

time are all far more included during music and dance compared to dance and other. We could hypothesise that the specific dance and music task designed for this session's adventure is promoting physical contact and group cooperation.

SESSION 2-SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
2’40’’- 6’10’’	**Dance** Movement game Animals of the story	Rosie has not arrived yet		(Walk around the room- I say ‘freeze’ - stop and make an animal statue, characters of the story - I need to guess). They are doing great, good listening to the music and nice representation of the animals. (find a partner and form a shape when I say freeze’) The children are once again very creative with great cooperation and attention skills.	*Enjoy the movement task-engaged and team work-inclusion*

SESSION 2-SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
6'20''- 11'10''	**Other** Story	Rosie comes in the room. She is wandering around the room. She comes to sit down near the circle but is quite fidgety. When I lift the map up, she comes nearer and seems very interested but goes further away again spinning on the floor and looking around. When I ask her to come nearer, she listens but is making no eye contact and is rocking.		Her friends and I greet her and we all sit down in the circle to start with the story. The rest of the group is trying to find ways to cross the lake in the story.	*Verbal language- away and off task.* *Props and visuals- motivate and promote participation and inclusion.*
11'20'' - 14'20''	**Dance** demo of task without music	She is the last one still sitting on the floor spinning. She then stands up and comes near me and holds my hand. Rosie follows Ebony without any prompt or help. R is still not holding hands but she is looking with high interest. She goes and stands at the other side of the room when the first round finishes but when I call her she comes near and joins the line. She is very eager to start. She is following me when I go to the other side to put the music on and Ebony comes and brings her back to the line holding her hand.		We stand up; I explain the task and I demonstrate it giving them the instructions and rules that apply to the adventure. Elsa is first then Ebony holding hands and then Rosie.	*Dance task promotes physical contact* *Peers help her to join*
14'30'' - 16'10''	**Music and Dance** Stones task	Rosie is at the end of the line before Peter. She seems not to understand fully the rules of the task but is happy and fully engaged. Peter is holding Rosie by the waist.		They are all waiting patiently for the music to start and as soon as they hear the piece they start without signal from me. Adam takes the lead this time. They are all doing really	*Music and dance task motivating and enjoyable* *Promoting physical contact and inclusion.*

SESSION 2-SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
				well, holding hands all along.	
16'20'' - 17'	**Dance** Transition without music	Rosie is moving away, seems unsure of what to do but follows her peers who try to re-engage her. She is also dancing, copying her peers during the transition.		Some children are slightly away, but are having fun. Children keep dancing without my prompt.	*Transitions are difficult, unstructured, seek movement-move away from group.*
17'20'' -23'	**Dance/ Music and Dance** Music stops but still moving **transitions**	She is mostly on task for the whole time. During transitions, she keeps dancing as do the other children and performs the task with and without music. Ebony holds her hands.		They are in shoulder hug, work cooperatively, have fun and want to do it one more time.	*Music and dance or dance itself- motivating, children want physical contact*
23'10'' - 25'40''	**Other** Story and prep for game	She now comes much nearer than before and is looking at the map. She is sitting down still and quiet, maintaining eye contact without fidgeting.		All children sitting together- some initiate physical contact.	*Movement has created sense of belonging*

SESSION 2-SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
		Peter puts his arm on her shoulder.			
25'50'' - 28'20''	**Dance** Movement game	She is dancing around the room. She has not understood the rules of the game (touch one part of body with partner) but she is moving around involved. Rosie is now following the task with Peter's prompts and assistance. She is still dancing.		She is dancing beautifully the whole time and different peers copy her!	*Peers are following and copying Rosie- value, celebrate her strength and contribution to the group*
28'30'' - 29'20''	**Music and Dance**	Rosie is performing the movement song with movements (no singing). She is very happy, jumps and claps. She is in physical contact all along.		They show me the hokey cokey in a circle holding hands all together and singing	*Action song-circle- familiar and motivating- inclusion.*

7.5.2.4 Summary of session 2

Session 2- crossing the river

Rosie really enjoyed this activity. She sat properly during listening times- perhaps she was now familiar with the group and felt relaxed enough to sit comfortably (as opposed to squatting). She needed some initial assistance respecting turn-taking but quickly understood and complied. She initiated interaction with other children e.g. reaching out to hold children's hands and gently 'pushing' a child into their place to signal that it was their turn.

It is evident in this session as well that verbal language is a barrier to active participation on task and inclusion for the child with autism. Rosie throughout the story parts seems uninterested and unsure of what is happening. The props used such as the toys and visual map help her understanding and are more motivating.

Another difficulty that Rosie is facing is transitions between activities. This was the case in the previous session as well as with L in the previous case study. During unstructured transition periods, Rosie also goes away from the group. In this particular session, we can see that all children seek movement and keep dancing during the transitions and while waiting for the music to restart. They practice the task throughout all transitions and request to repeat it several times.

During the movement tasks, she is able to stay on task, is engaged and works well in the group. Interestingly, Rosie is quickly aware of what she need to do during the music and dance task, she is able to copy others and remain focused and engaged. The music and dance task is fun, enjoyable and appears to be more meaningful for Rosie compared to the story. In addition, music and dance or dance by itself is promoting physical contact and co-operation. As we can see in different

occasions, different children help Rosie to join in and re-engage her when necessary.

Finally, as we can see in this session, towards the end, Rosie is dancing freely and her peers start to copy her movements and join in her dancing. They seem to value and celebrate her special ability and strength in dance and Rosie's contribution to the group and the sessions. This is a clear evidence that dance can be a powerful tool in creating a sense of belonging and promoting inclusion, for this particular group. It would be interesting to further investigate the impact of using children's special abilities in learning to overall celebration of difference and inclusion.

The qualitative analysis of this session allowed us to consolidate previous findings and see some new dimensions of dance.

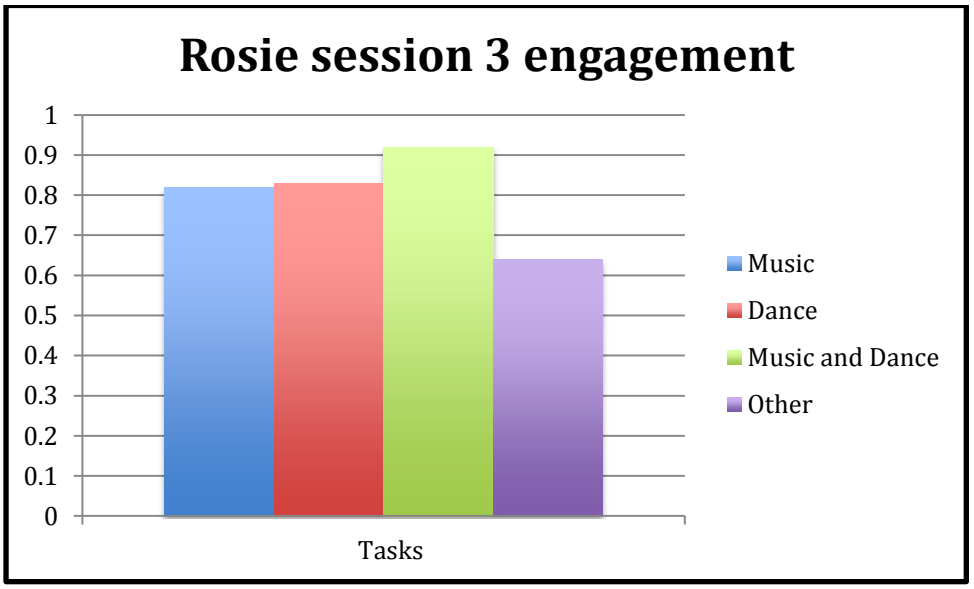
- Verbal language and transitions between tasks can be a barrier to participation and inclusion.
- Props and visual aids increase motivation, engagement and therefore inclusion.
- Dance offers a lot of opportunities for physical contact
- Dance routines are easier to learn through copying and therefore promote active engagement and inclusion
- Special abilities of children with autism, and in this case dance, can be used in learning to raise peer awareness, celebrate difference and achieve inclusion.

7.5.3 Session 3

7.5.3.1 Engagement on task- ASC

Figure 7.5.3.1 below shows that Rosie was clearly more engaged during the music and dance task, in which she scored quite high, followed by 'dance' and 'music' by themselves. The score of on task during other activities is significantly much lower.

Figure 7.5.3.1 Rosie, session 3, engagement on task

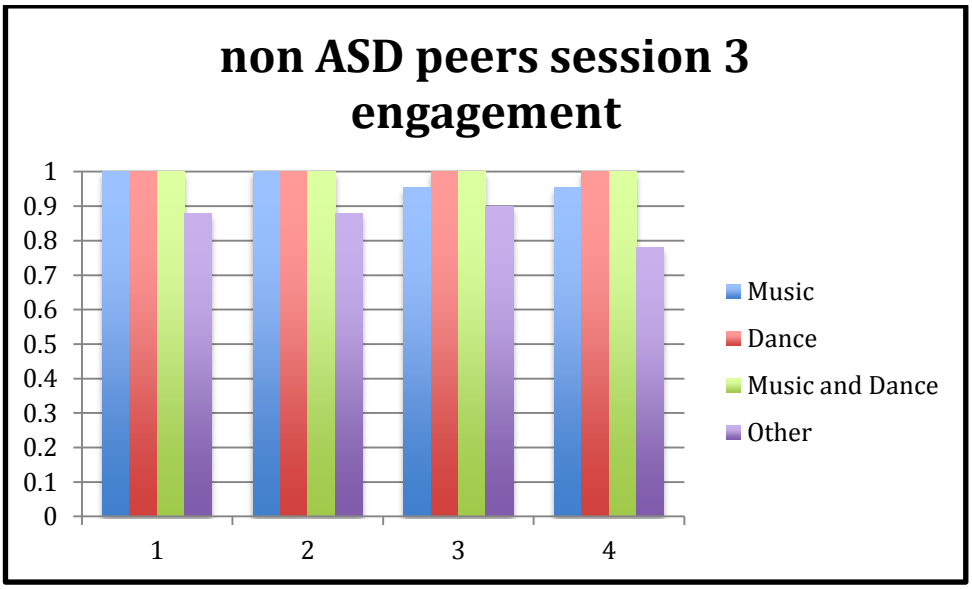


Notes N=1, percentage of engagement on task in session 3 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

Engagement on task- Non ASC

As we can see in Figure 7.5.3.2 below, all participants are less engaged during 'other' compared to the other three variables. Everyone scores the maximum during music and dance as well as during dance by itself but the boys score a bit lower during music.

Figure 7.5.3.2 Neurotypical peers, session 3: engagement on task



Notes N=4, percentage of engagement on task in session 3 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement

SESSION 3- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
0-4’	**Other** Intro of session and story	Rosie arrives at 2’50’’. Everyone greets her very warmly. A approaches her to give her the monkey. Rosie says: ‘*Hello to Tina’* and waves when prompted by the SENCO. She is sitting down and is engaged looking at the map. I ask her if she remembers what we did last week pointing at the map and saying ‘*lake*’ and she says ‘*water*’.		Ebony comes first in the room saying she is very excited, because we have the session together. She shouts and jumps with joy when I say we will do lots of dancing today. They all sit down in a circle and take the animals out of the bag. They remember that we did the stepping stones last week. Peter wants to be the leader and says: ‘*that was fun*’. We look at the map and talk about the story and then about their week so far while waiting for Rosie.	*Remembers the music and dance task from last week- uses verbal language relevant to the music and dance task adventure. [First time that she uses her own words –no echolalia].*

SESSION 3- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
4'10''-5'50''	**Music and Dance** Repetition of task-stones	Rosie is the last one to stand up holding Ebony by her hand and needs some help to join the line. She is joining in and is on task without any support. Engaged throughout the activity.		They help her to join the line being the one before last.	*Music and dance-motivating- engagement*
6'-9'30''	**Other** Story	Rosie joins in with prompting and support from Ebony. She engages at first with the storytelling but after a while Rosie does not maintain eye contact anymore and plays with the monkey. She is smiley, plays with Elsa's toy but is not engaged.		When they finish they all chat and play. Then sit down for the story. Elsa and Adam stand up and enact the story while I narrate.	*Engaged for a while after music and dance-but then story (off task)- lack of understanding*
9'40"-10'	**Music** Piece for adventure task	I put the music on and she is standing next to me. Rosie copies Elsa's movement while holding my hand.		We stand so that I teach them the dance. Elsa starts to move more freely	*She hears the music and recognises that a motivating task will follow*
10'10'' - 11'10''	**Dance** Teach steps without music	When I show them the routine she follows and stops her improvised movement. As soon as I stop she continues her dancing.		They are all on task and engaged.	*Loves movement*

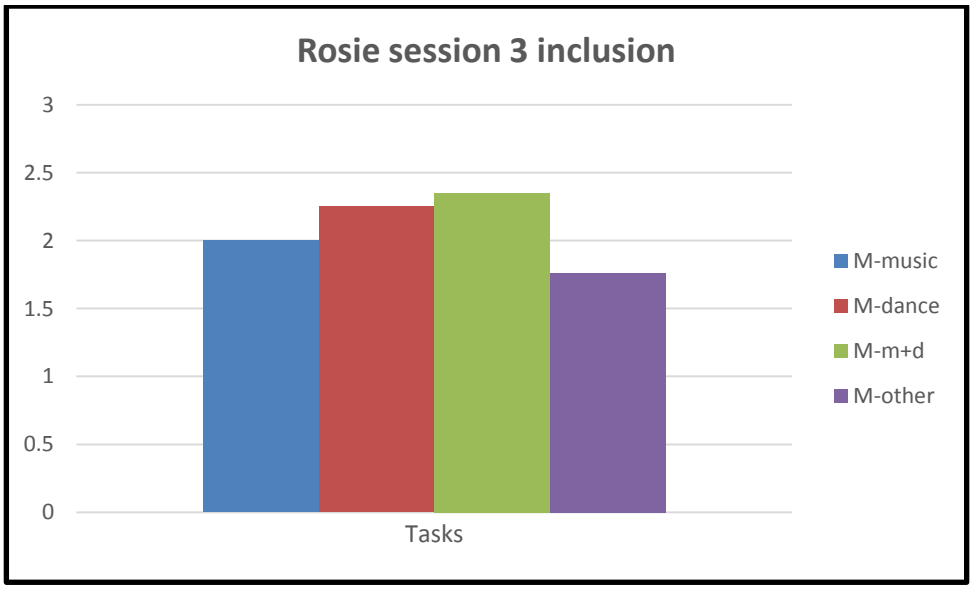
SESSION 3- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
11'20'' - 11'50''	**Music** Count to the beat	Rosie is listening to the music, occasionally moving to the beat. She is happy and smiley.		Everyone is motivated and engaged. The boys are slightly off task; they are moving around the room together forming shapes, creating a dance game.	*Music creates and encourages movement*
12'- 17'40''	**Music and Dance**	She finds it harder to follow the girls when they do it in partners compared to when she was dancing in the circle. She is on task throughout. Needs very little prompting. She is leading the dance with Adam.		They are all on task and follow the instructions and rules of dance game, choosing different partner. Everyone is able to follow the steps and remember the routine.	*Circle works well in dance More people to copy? Mirroring*
17'50'' - 18'10''	**Other** Story		As soon as the task finishes she goes to take the monkey.	We sit down in the circle again.	*Does not follow group but shows interest in the story by taking the prop.*
18'20'' - 20'10''	**Music**	Music plays accidentally and her face expression changes so I leave it on (is the relaxing piece used for session 1). She is not		Everyone is looking at the map and join in quiet discussion listening to the music at the	*Music- relaxation- absorbed*

SESSION 3- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
		looking at the map but plays with the toy and is enjoying the music.		same time. I ask them to choose what they want to do for the last five minutes.	
20'20'' - 23'20''	**Music and Dance**	She seems not to understand what is happening but when they start playing 'duck duck goose' she knows exactly what to do. When is Rosie's turn to go around the circle and say 'duck duck goose', everyone is trying to help her. She goes around herself saying '*duck*' and after a full circle Elsa prompts her to say '*goose*'. Rosie repeats tapping on Adam's head.		They choose duck duck goose and want the music on. The follow the pace and volume of music. They run around and sit down. After two more times, we finish this game.	*Happy and engaged* *Familiar game- circle- movement* *Music helps to play the game quietly*
23'30'' -25'	**Other** Choosing and setting up game		Rosie is still sitting on the floor playing with the monkey. Ebony holds her hand and she stands up. She is now off task while we discuss how to play musical chairs using the stones.	They all stand up; discussing about what game to play and help to set it up	*Verbal language-transition no structure*

SESSION 3- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
25’10’’ -27’	**Music and Dance**	Rosie is also running around. When the music stops she is the first to be out of the game. She stays on the side and watches, dancing on the music.		They enjoy the game, they are happy and involved.	*Music and movement familiar game* *Difficult to understand rules- child with autism is out first*
27’10’’ - 27’40’’	**Other** End of session		Rosie does not join in the end tidy up and discussions.	Everyone helps to tidy up. They talk about the session and ask about next week.	

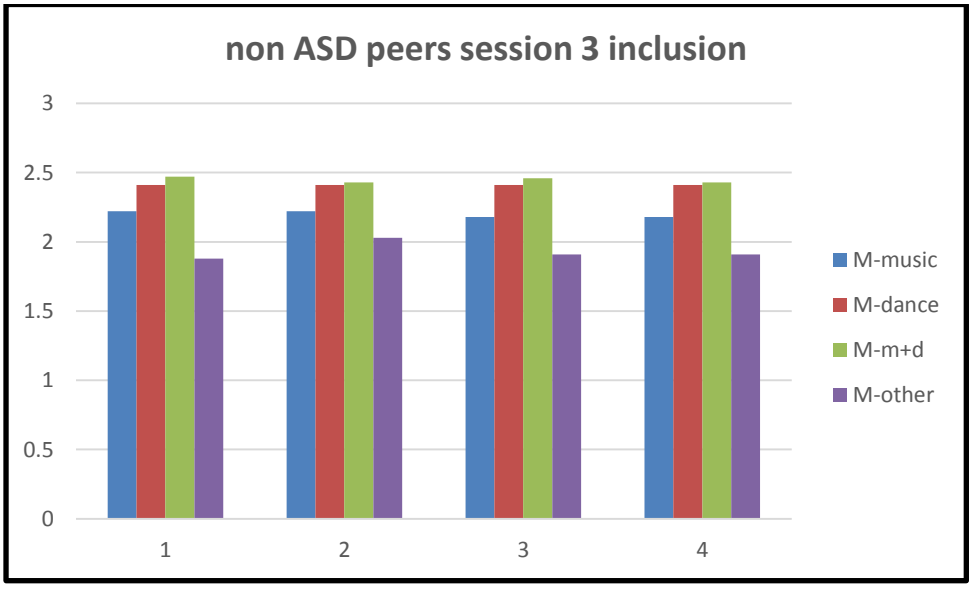
7.5.3.2 Spatial proximity - ASC/ Non ASC participants

Figure 7.5.3.3 Rosie, session 3: inclusion



Notes N=1, mean score of level of inclusion in session 3 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

Figure 7.5.3.4 Neurotypical peers, session 3: inclusion



Notes N=1, mean score of level of inclusion in session 3 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

Figures 7.5.3.3 and 7.5.3.4 above show an homogeneity in the scores of all participants in the physical contact/inclusion variable. In particular, Rosie as well as her peers are more included during music and dance, followed by dance, music

and other. We can hypothesise that this score performance is due to the fact that the music and dance task has been designed to promote co-operation, physical contact and inclusion. This of course does not exclude the fact that this could have had adverse results, if for example the child with autism did not want to participate or was not tolerant to touch.

SESSION 3- SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC - Included	ASC- Excluded	Non ASC participants	Interpretations
0-4'	**Other** Intro of session and story	Rosie arrives at 2'50''. Everyone greets her very warmly. Adam approaches her to give her the monkey. She is sitting down, closer to the circle this time and Ebony hugs her.		They all sit down in a circle and take the animals out of the bag. They remember that we did the stepping stones last week. They are talking to each other; are very welcoming towards Rosie.	*Remembers the music and dance task from last week Embracing welcome from peer.*
4'10''-5'50''	**Music and Dance** Repetition of task-stones	Rosie is the last one to stand up holding Ebony by her hand and needs some help to join the line. She is joining in and is on task without any support. She is included throughout the activity.		They help her to join the line being the one before last. The three girls are holding hands.	*Music and dance-physical contact-inclusion Repetition of task*
6'-9'30''	**Other** Story	Rosie is by herself. She then joins in with prompting and support from Elsa. She is sitting with the group but does not maintain eye contact and plays with the monkey. She is smiley, plays with Elsa's toy but is not engaged. She is still sitting in the periphery of the circle.		When they finish they all chat and play. Then sit down for the story. They work well in the group.	*Away but peer invites her but then story (away and off task)- lack of understanding*

SESSION 3- SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC - Included	ASC- Excluded	Non ASC participants	Interpretations
9'40"- 10'	**Music** Piece for adventure task	I put the music on and she is standing next to me. Rosie copies Elsa's movement while holding my hand.		We stand so that I teach them the dance. Elsa starts to move more freely.	*She hears the music and recognises that a motivating task will follow* *Copies movement- bond with peers*
10'10'' - 11'10''	**Dance** Teach steps without music	When I show them the routine she follows and stops her improvised movement. As soon as I stop she continues her dancing.		They are all working together and initiating physical contact. The girls choose Rosie.	*Loves movement- inclusion* *Accepted by group.*
11'20'' - 11'50''	**Music** Count to the beat	Rosie is listening to the music, occasionally moving to the beat. She is happy and smiley. Stays with the group throughout.		Everyone is working together. The boys are slightly away; they are moving around the room together forming shapes, creating a dance game.	*Music creates and encourages movement* *Partner work and inclusion*
12'- 17'40''	**Music and Dance**	She finds it harder to follow the girls when they do it in partners compared to when she was dancing in the circle. Needs very little prompting. She first dances with me then with Peter and finally with Adam. She is leading the		The girls choose the two boys this time so I offer to do it with Rosie as the 6th child is absent	*Circle works well in dance* *More people to copy?* *Mirroring*

SESSION 3- SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC - Included	ASC- Excluded	Non ASC participants	Interpretations
		dance with Adam initiating contact. When we finish she goes away. Then she approaches. She will dance it with Peter this time.		again today. Ebony and Peter take her in their group but in the end she dances with me.	*Dancing with different people- inclusion*
17'50'' - 18'10''	**Other** Story		As soon as the task finishes she goes to take the monkey.	We sit down in the circle again.	*Story? Difference to previous music and dance tasks.*
18'20'' - 20'10''	**Music**	Music plays accidentally and her face expression changes so I leave it on (is the relaxing piece used for session 1). She is not looking at the map but is sitting in the group.		Everyone is looking at the map and join in quiet discussion listening to the music at the same time. All sitting nicely next to each other.	*Music- relaxation- group work*
20'20'' - 23'20''	**Music and Dance**	She joins 'duck duck goose' and knows exactly what to do. When is Rosie's turn to go around the circle and say 'duck duck goose', everyone is trying to help her. She goes around herself saying '*duck*' and after a full circle Elsa prompts her to say '*goose*' and takes her by her hand.		They choose duck duck goose and want the music on. The follow the pace and volume of music. They are playing calmly and help one another.	*Included- peers helping Familiar game- circle- movement Music helps to play the game quietly*

SESSION 3- SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC - Included	ASC- Excluded	Non ASC participants	Interpretations
23'30'' -25'	**Other** Choosing and setting up game	Rosie is still sitting on the floor playing with the monkey. Ebony holds her hand and she stands up. She is now away while we discuss how to play musical chairs using the stones.		They all stand up; discussing about what game to play and help to set it up	*Peers help her to join- transition*
25'10'' -27'	**Music and Dance**	Rosie is also running around. When the music stops she is the first to be out of the game. She stays on the side and watches, dancing on the music.		They enjoy the game, they are happy and involved. Working cooperatively.	*Child with autism is out first Losing in these games Compared to previous music and dance tasks.*
27'10'' - 27'40''	**Other** End of session		Rosie does not join in the end tidy up and discussions.	Everyone helps to tidy up. They talk about the session and ask about next week.	

7.5.3.3 Summary of session 3

Session 3- song and dance

This session was greatly enjoyed by Rosie. She participated very well. She freely counted her claps (as previously modelled by Tina) and followed instructions. She initiated interaction with other children e.g. reaching out to hold hands. She was initially passive when it came to choosing a partner but did, after a while, run to find a partner.

In the third session of the intervention programme, Rosie has been more engaged and included in the group during the music and dance task, followed by dance, music and finally other. This can be due to the fact that dancing is highly motivating for her and therefore she is engaged and stays with the group. The music and dance tasks are also found to promote physical contact and Rosie is happy to be near the group and hold hands during those motivating tasks. It is clear that during the story time, she may sit on the periphery of the circle or even away from the group. As we have also noticed at different occasions during the programme so far is that even if she is sitting in the circle she is not involved in any interaction.

On the other hand, for the first time in the programme Rosie has used verbal language to reply to my question. At two-three occasions in the previous sessions she has said a couple of words but it was mostly echolalia, repeating words modelled by me or her peers. I asked her if she remembers what we did last week pointing at the map and saying '*lake*' and she said '*water*'. Rosie remembered the music and dance task from last week and used a word to describe it and she then looked at stones and stood up. Dance is very motivating for Rosie and this may have been the reason for using language to communicate with me. Later in the

session, as soon as she heard the music she seemed to have recognised that a motivating task would follow. All the above allow us to suggest that music and dance can be a motivating task for a child with autism, create strong memory associations and used to complement other tasks requiring use of language.

The music and dance adventure task this week involved dancing in a circle, dancing with a partner and solo. Although Rosie was engaged in all different parts, she was more included when dancing in the circle. Circle dances have been long documented to create a sense of community and belonging and dance therapists and teachers use the circle to bring together the participants and create cohesion and expression of emotions (Capello, 2007).

The concept of circle and use of movement and music are also dominant in the familiar children's games that we played at the end of the session; 'duck goose' and 'musical chairs'. Music seemed to help children play the game calmly and with better coordination and cooperation. Rosie was engaged in the tasks and enjoyed playing with the others but she needed lots of support to join and play as she was not able to understand and follow the rules even though they are familiar games that the children play regularly. Rosie was also the first one to go out of the game or lose as is often the case for the children with autism and this can have a negative impact on their self- esteem and confidence. In contrast, the music and dance tasks used during the intervention programme Rosie was able to engage actively and the other children admired her skills and were copying her, which can be beneficial for her self-efficacy and inclusion in the group.

Finally, as found from the analysis of the previous sessions and group, the use of verbal language, transitions and lack of structure during some tasks were barriers

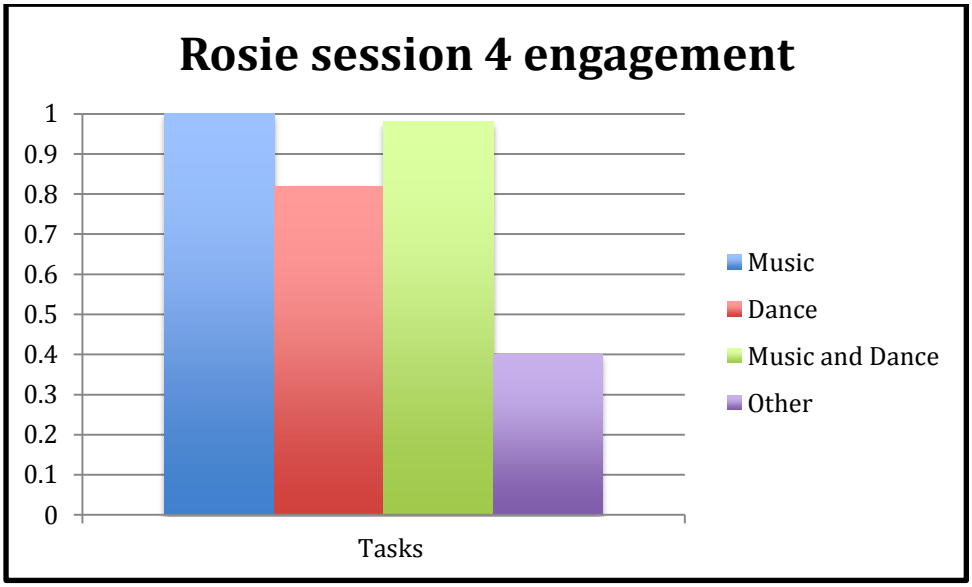
to participation in activity and inclusion in the group. The new elements that arise from the qualitative analysis of session 3 are the following:

- Music and dance, when being motivating tasks can help in the development of language in children with autism and can be used for that aim.
- The circle in dance can be used to create spatial awareness, cohesion, promote physical contact and inclusion (Capello, 2007).
- Familiar children's games already including movement or music could be re-designed to place emphasis on the use of music and dance for all the benefits mentioned so far but also to redirect the focus from losing/coming out of the game. Movement activities can replace some of those games during playground time, which can be problematic for children with autism.

7.5.4 Session 4

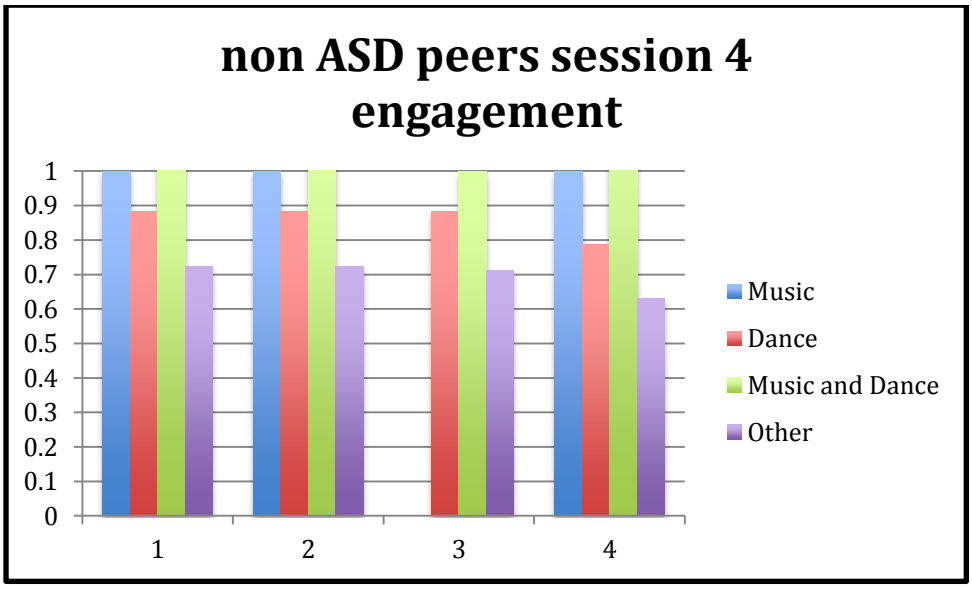
7.5.4.1 Engagement on task ASC/Non ASC participants

Figure 7.5.4.1 Rosie, session 4 engagement on task



Notes N=1, percentage of engagement on task in session 4 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

Figure 7.5.4.2 Neurotypical peers, session 4: engagement on task



Notes N=4, percentage of engagement on task in session 4 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

Figures 7.5.4.1 and 7.5.4.2 indicate that Rosie was fully engaged during the music task followed by nearly maximum score during music and dance. Those scores are followed by dance and finally other. The girls in the group present similar results to Rosie but both girls score the maximum for music and music and dance and then lower during dance by itself and other activities. Interestingly, the two boys are far less engaged on task during the music activity. All neurotypical participants score the maximum during music and dance (3) and Rosie also scores as really high (0.97).

SESSION 4- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
1'-2'	**Other** Story	Rosie goes straight to pick up her monkey. Then when I ask them to come near she joins the group sitting in the circle. She is smiley, looking around.		They come in; Peter seems sad, sitting on the side, away from group and off task, does not join in.	*Familiar with session and its structure but story= off task*
2'-5'10''	**Dance/ Music and Dance** Repetition of task	The three girls are dancing in the circle before we start the task. Rosie is on task. She does not need to copy her peers, as she knows the dance routine, although today she is not doing the 'crazy dance'. Then when is time for the partner work, the three girls dance it together.		They all take positions while waiting for the music to start. They ask me to dance it with them although they remember the routine anyway. We only do the 1st part of the dance without the partner routine. I stop the music and we dance it from the top. They all remember the task very well.	*Repetition of task- music and dance* *She remembers the routine does not copy others*
5'20''-9'10''	**Other** Story		She is calm and non-fidgety. She is playing with the monkey and shows no interest in the	We sit back in the circle to narrate the new section of the story. The children join in with questions and comments.	*Verbal language- shows some understanding by smiling when I mention the monkey.*

SESSION 4- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
			story or the rainmaker. She smiles when I mention the monkey. She is clearly off task.		
9'20''-11'	**Dance** Practice task without music	As soon as she sees the tunnel she wants to stand up. Rosie puts the animals inside the tunnel. Rosie is the first one to cross the tunnel and to play the instrument. There was no demonstration of the task by me or other student before the start of task.		Everyone stands up and joins in. The other children laugh and copy what Rosie is doing. Ebony is physically prompting Rosie to do the task.	*Tunnel=prop=motivation Takes initiative- wants to be first does task w/o seeing demo Props= improvisation for music and dance*
11'10'' - 13'20''	**Music and Dance** Task of the week	She wants to go back and jump the queue. Rosie now starts the second round of the task, plays the rainmaker and while waiting for her next turn she is looking at what her friends are doing. She seems very happy, is on task for the whole time and wants to go through for a fourth time but we tidy up.		Elsa physically helps her to join the end of the line. Everyone is on task.	*Familiarity with the sessions and tasks- engagement*

SESSION 4- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
13'30'' - 14'20''	**Other** Transition between tasks	Rosie throws her monkey in the tunnel, which I hold standing up.		Everyone copies R.	*Wants to continue physical activity invents game peers copy*
14'30'' - 15'20''	**Music** Song	Rosie is still looking at the tunnel while we listen to the song.		They are all listening, moving slightly to the rhythm of the music.	*Music- engaged*
15'30'' - 16'20''	**Other** Transition between tasks		As soon as the music stops Rosie goes off task and after a few seconds she requests to go to the toilet.	The others play 'basketball' with the tunnel by throwing the animals in like Rosie was doing before.	*Other – transition As soon as music stops= off task*
16'30'' - 17'40''	**Music** Song	Rosie is out of the room. As soon as Rosie comes in, she comes close and is laughing as well together with her peers, looking at Peter.		I put the song back on and the children sing. Peter is playing with the rainmaker, and then goes in the tunnel and the others are turning him round. They are all laughing.	*Music- enjoyment- laughter*

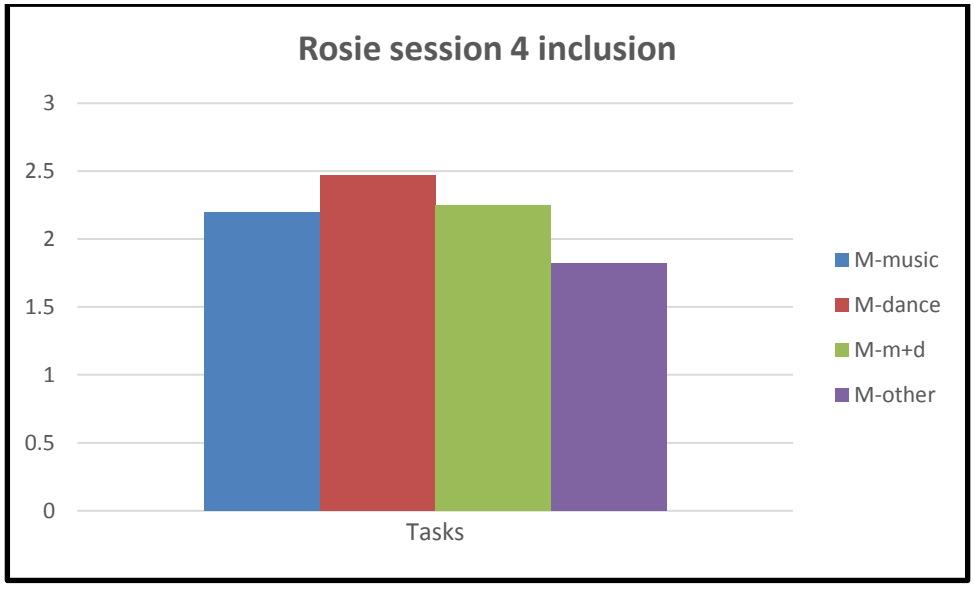
SESSION 4- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
17'50'' - 21'	**Other** Transition between tasks.		Rosie is off task and away.	They are ready to do the task one more time. We are talking about the order with which they will go through the tunnel.	*Other- transition- off task*
21'10'' - 23'50''	**Music and Dance** Task of the week	Rosie is standing in the line and dancing on the spot at the same time. She is again performing the task really well. The task finishes but the music still plays and R is dancing freely to the music. She also takes the rainmaker and plays moving around the room.		They are doing the task really well, working together as a team.	*Music and dance task Particularly enjoys this activity Props?*
24'-26'	**Other** End of session	Rosie starts first without waiting.		They ask me to play the 'basketball' game. They all have a go and just before the end of the session they are all slightly off task for the first time throughout the intervention so far.	*End of session- on task follows peers who are soon off task*

7.5.4.2 Spatial proximity - ASC/ Non ASC participants

The Figures below show a rather different representation of the participants' scores in relation to their inclusion in the group and the degree of physical proximity. This highly contrasts with the scores of inclusion in the previous three sessions during which there was an homogeneity of scores across the children. In this session, Rosie was more included during dance followed by music and dance, music and other (Figure, 7.5.4.3).

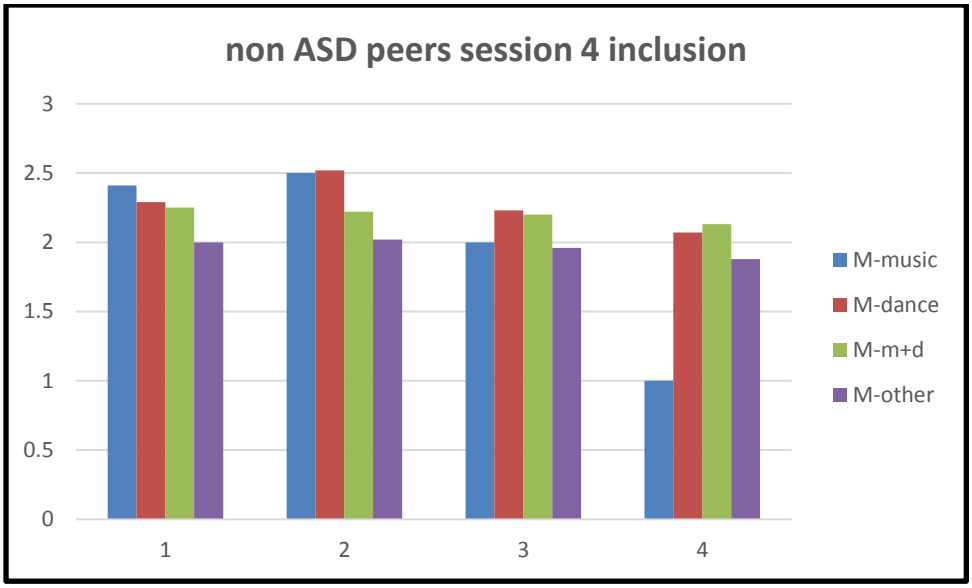
We have a similar picture of one boy's performance (child 4), as shown in Figure 7.5.4.4 The other boy was more included during music and dance followed by dance, and was totally away from the group during the music task. On the other hand, one of the girls scored the maximum during the music task, followed by dance, music and dance and other whereas the other girl in the group scored higher during dance followed really closely by music.

Figure 7.5.4.3 Rosie, session 4: inclusion



Notes N=1, mean score of level of inclusion in session 4 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

Figure 7.5.4.4 Neurotypical peers, session 4: inclusion



Notes N=4, mean score of level of inclusion in session 4 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

SESSION 4- SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
1'-2'	**Other** Story	Rosie goes straight to pick up her monkey. Then when I ask them to come near she joins the group sitting in the circle.		They come in; Peter seems sad, sitting on the side, away from group and off task, does not join in.	*Familiar with session and its structure but story= off task although included.*
2'-5'10''	**Dance/ Music and Dance** Repetition of task	The three girls are dancing in the circle before we start the task holding hands. She is staying very near the group for the solo part and when is time for the partner work, the three girls dance it together.		They all remember the task very well. Included and in contact throughout.	*Repetition of task- Dance- physical contact.*
5'20''-9'10''	**Other** Story	Rosie joins the group. She is clearly off task but is still sitting with the group.		We sit back in the circle to narrate the new section of the story. The children join in with questions and comments. Working together.	*Verbal language- included but off task*

SESSION 4- SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
9'20''- 11'	**Dance** Practice task without music	Rosie wants to be first in the line so I ask the mouse to decide who will be first. Ebony chooses Rosie.		Everyone stands up and joins in. The other children laugh and copy what Rosie is doing.	*Copying R, choice from peer to go first= inclusion*
11'10'' - 13'20''	**Music and Dance** Task of the week	She is very near the group		Elsa physically helps her to join the end of the line. Everyone is on task.	*Music and dance create opportunities for physical contact.*
13'30'' - 14'20''	**Other** Transition between tasks	Rosie throws her monkey in the tunnel, which I hold standing up.		Everyone copies Rosie.	*Copying= inclusion*
14'30'' - 15'20''	**Music** Song	Rosie is still looking at the tunnel while we listen to the song.		They are all standing next to each other, moving slightly to the rhythm of the music.	*Music- inclusion- physical proximity.*
15'30'' - 16'20''	**Other** Transition between tasks		As soon as the music stops Rosie goes away and after a few seconds she requests to go to the	The others play 'basketball' with the tunnel by throwing the animals in like Rosie was doing before.	*Other – transition As soon as music stops= away*

SESSION 4- SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
			toilet.		
16'30'' - 17'40''	**Music** Song	Rosie is out of the room. As soon as Rosie comes in, she comes close and is laughing as well together with her peers, looking at Peter.		I put the song back on and the children sing. Peter is playing with the rainmaker, and then goes in the tunnel and the others are turning him round. They are all laughing.	*Music- enjoyment- laughter- inclusion*
17'50'' - 21'	**Other** Transition between tasks.		Rosie is off task and away.	They are ready to do the task one more time. We are talking about the order with which they will go through the tunnel.	*Other- transition- away*
21'10'' - 23'50''	**Music and Dance** Task of the week	Rosie is standing in the line and dancing on the spot at the same time. She is again performing the task really well. The task finishes but the music still plays and Rosie is dancing freely to the music. She also takes the rainmaker and plays moving around the room.		They are doing the task really well, working together as a team.	*Away but on task dancing and playing instrument.*

SESSION 4- SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
24'-26'	**Other** End of session	Rosie starts first without waiting.		They ask me to play the 'basketball' game. They all have a go and just before the end of the session they are all slightly off task for the first time throughout the intervention so far.	*End of session- included follows others.*

7.5.4.3 Summary of session

Session 4- through the tunnel

Rosie grasped the elements of turn-taking in this activity and was, quite quickly, able to manage engaging in the sequence of events by herself i.e. waiting her turn to travel through the tunnel, taking the musical instrument and then handing it to the next person. This is a real achievement for Rosie to be able to sequence these elements together.

The fourth session of the intervention has been particularly successful for Rosie and her peers. The detailed analysis of the session shows that by session 4 Rosie was familiar with the session, its structure and tasks. This promoted her engagement and inclusion even though she was less engaged during story time, transitions and other language-based tasks. She was also taking a lot of initiative and wanted to be the first to try the new task without seeing what the task involved. It seems that by that point in the programmes she could recognise that first there would be a story sitting in a circle and then a music/dance task involving movement around the room. This can support previous findings, which show that repetition of music and dance tasks promote engagement and consolidate physical contact and inclusion. When repeating the task from the previous week she clearly remembered the routine and did not copy others.

Rosie at various occasions throughout the session wanted to continue dancing and as soon as the task ended she ‘invented’ a movement game, which her peers copied. At the end of the session she followed her peers who soon became disengaged. Rosie continued to dance and play the instrument around the room. It has been overall a very enjoyable session for Rosie and music seemed to be the main source of enjoyment and laughter for her during the session. She was

initiating games and movements and as soon as the music stopped she was going away and off task.

The use of props, and in this session mainly the tunnel, has been once more found to be promoting engagement, as they are highly motivating and associated to a motivating activity involving music and movement. They also helped to create an inspiration for the spontaneous creation of games and movements.

Finally, although language seemed to be a barrier for Rosie's active participation in the story tasks and all other tasks, as we also noticed in session 3, Rosie seemed to have improved within this intervention programme. In the previous session, Rosie used for the first time spontaneous language, which related to the story and the tasks whereas in this one she smiled at me when I mentioned the monkey.

The detailed analysis of session 4 further consolidates the previous findings on the following:

- Importance of familiarity with tasks and repetition
- Use of props to motivate and engage
- Music and dance offer opportunities for creativity, participation, inclusion and development of verbal language.

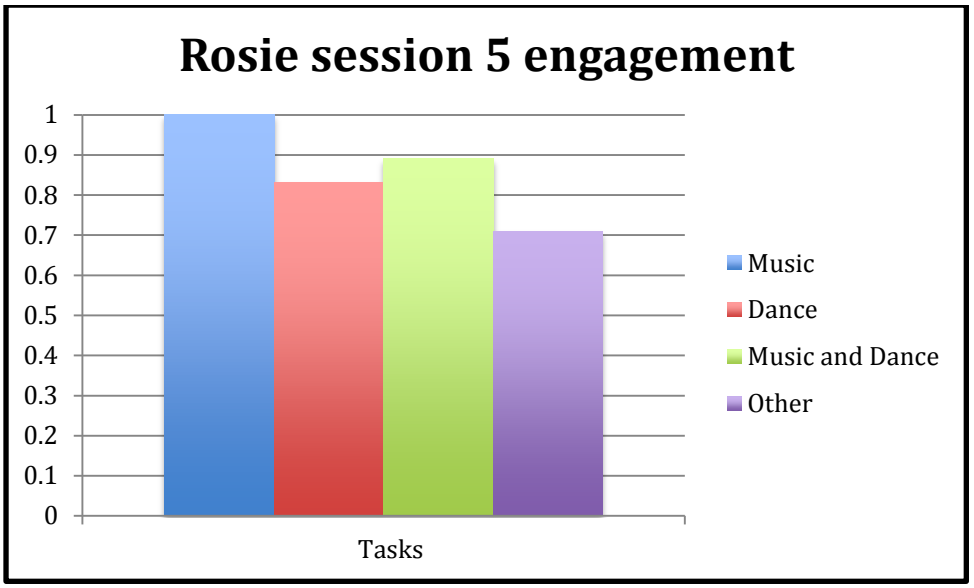
7.5.5 Session 5

7.5.5.1 Engagement on task ASC participant

In the fifth session of the intervention programme, Rosie scores the maximum during the music activities followed by music and dance, dance and finally other (see Figure 7.5.5.1). In session 4, Rosie was fully engaged during music as well,

scoring the highest. The task involving music on its own was relatively short this week.

Figure 7.5.5.1 Rosie, session 5: engagement on task

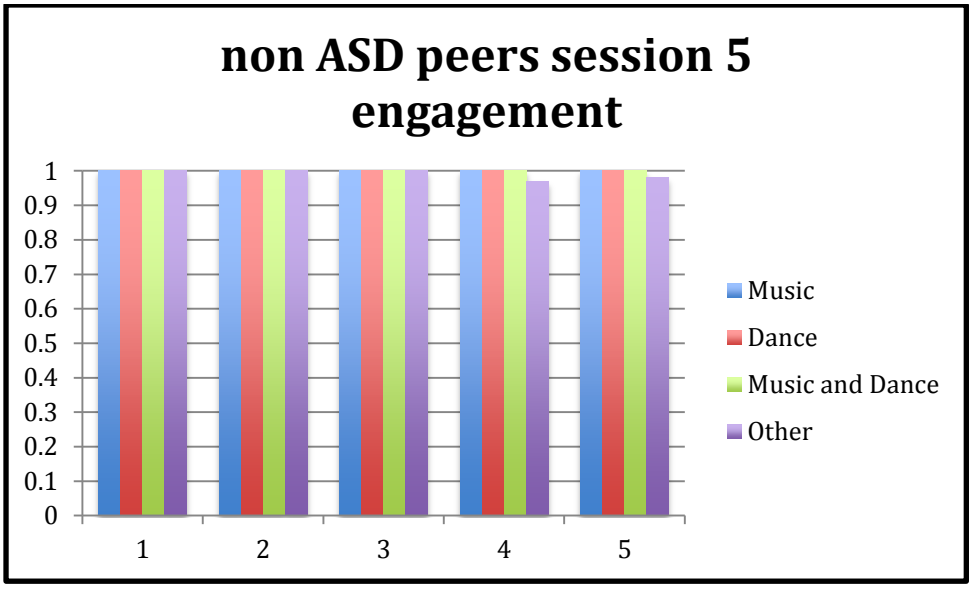


Notes N=1, percentage of engagement on task in session 5 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

Engagement on task non-ASC participants

It has been a very successful session for all participants. As shown in Figure 7.5.5.2, three out of five score the maximum in all tasks, whereas the other two are fully engaged during all tasks except 'other'. As we will see in the detailed analysis of the session, the low performance of the two pupils in the other activities may be due to the fact that they missed part of that section, which could mean that they did not fully understand the task. This week, the fourth girl of the group was present for the first time.

Figure 7.5.5.2 Neurotypical peers, session 5: engagement on task



Notes N=5, percentage of engagement on task in session 5 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

SESSION 5- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
0-6’	**Other** Room and session set up	Rosie is the first one to come in. She comes in with her LSA this time. She takes the animals out of the bag as prompted. She is playing with the monkey. I try to interact with her, throw and catch the monkey and talk to her but without success. Eventually, she catches when I throw it and throws it back to me maintaining eye contact. Rosie is still playing with the toy and looking out of the window. She is galloping around the room.		Ebony came in the room. Then the other children come one at a time and take their animals.	*Familiar with the session and myself* *Responds to physical game*
6’10’’-9’40’’	**Music** Unplanned activity	Rosie is still dancing and playing. I put on some music for her and she smiles and dances for a while with more intention and controlled movement.		The girls are chatting and enjoying the music. They follow Rosie at times.	*Responds very well to music, creates dance sequence.*
9’50’’-12’	**Other** Story	Rosie is sitting in the circle and shows interest in the story.		We all sit in the circle. We talk about the story so far and last week’s adventure.	*Shows interest in the story* *Follows her dancing to music*

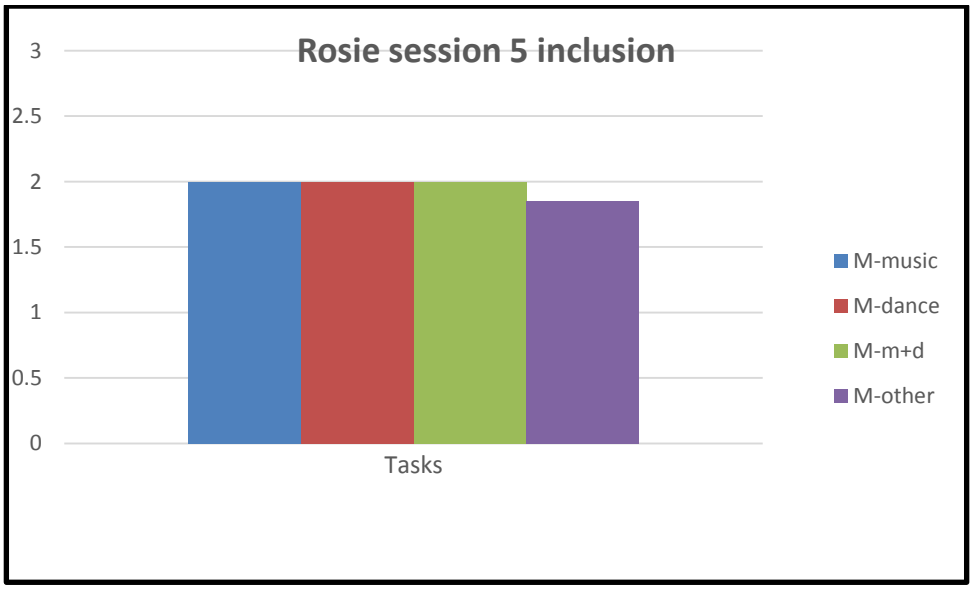
SESSION 5- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
12'30'' - 15'30''	**Music and Dance** Repetition of task	Rosie seems very happy and excited when she sees the tunnel. She moves slightly away but maintains eye contact. When I call her, she joins the line. Rosie is doing really great. The second time to go through the tunnel Rosie remembers to play the instrument.		They perform the task with success. Peter is following Rosie and helps her. The new girl joins in as well beautifully. They do the task with a lot of concentration and without talking, focused and quietly.	*Repetition of task* *Tunnel* *All participants concentrated*
15'40'' - 16'20''	**Music** Repetition of task	Rosie is on task, listens to the song and spontaneously picks up the rainmaker and plays.		After going through the tunnel three times I put the song on and they sing. Elsa and Ebony are mainly the ones singing as well as Adam.	*R not singing as non-verbal joins in by playing the instrument.*
16'30'' -18	**Music and Dance** Repetition of task	Rosie is dancing to the song and enjoys going through the tunnel and moving around the room.		They want to go through the tunnel but also move to the beat of the song.	*Repetition of task* *Music and dance*

SESSION 5- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
18'10'' - 23'50''	**Other** Story	Rosie is the last one to sit down but once again joins in. She is quiet and non-fidgety. She is also maintaining good eye contact with me especially when I narrate the part of the story when the monkey is sick. Rosie seems more alert today during the story time and looks at me every time I mention the monkey. She soon though becomes impatient and fidgety and wants to stand up.		When the task finishes we sit back in the circle. They are listening with great attention and everyone is participating.	*More focused after music and dance task- seems more alert and interested in story.* *Story time too long*
24'-25'	**Dance** Demo of task	Rosie is doing great especially during the first steps. Rosie hugs Ebony after I explain what we need to do.		We then stand up and I demonstrate the beginning of the dance for this week's task.	*Understood task- demo of what we need to do*
25'10'' - 26'50''	**Music and Dance** Task of the week	Rosie hugs Ebony again. Instead of walking around the room she is dancing. She moves slightly away but then re-joins. She seems unsure on what to do but responds well to hugs and copies her peers. The last two times she responds to Tallulah's hug and mine.		I put the music on and Elsa and Tallulah are singing. Peter hugs Rosie.	*At times she is not sure what to do but engaged* *Extends task instead of walking- dancing*
27'- 27'40''	**Other** Transiti on		When I stop the music so as to do it again and explain the rules she goes away but is still dancing.	They are all waiting in positions for the music to start. They are chatting to each other.	*Transition- music stops*

SESSION 5- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
27'50'' - 29'30''	**Music and Dance** Task of the week	She is not doing the introduction this time but she is very excited. She goes to the toilet and misses half of the song.		We perform the task one more time.	*Enthusiastic about task- expresses emotions*
29'40'' - 31'30''	**Other** Story- end of session		She is at the other side of the room. Comes to sit down for the last few seconds; leaves the room hopping.	When the dance is over, Peter takes the rainmaker and sits down. They are all very happy that we passed all the adventures and say that one week is too far to wait.	*Language –off task but dancing*

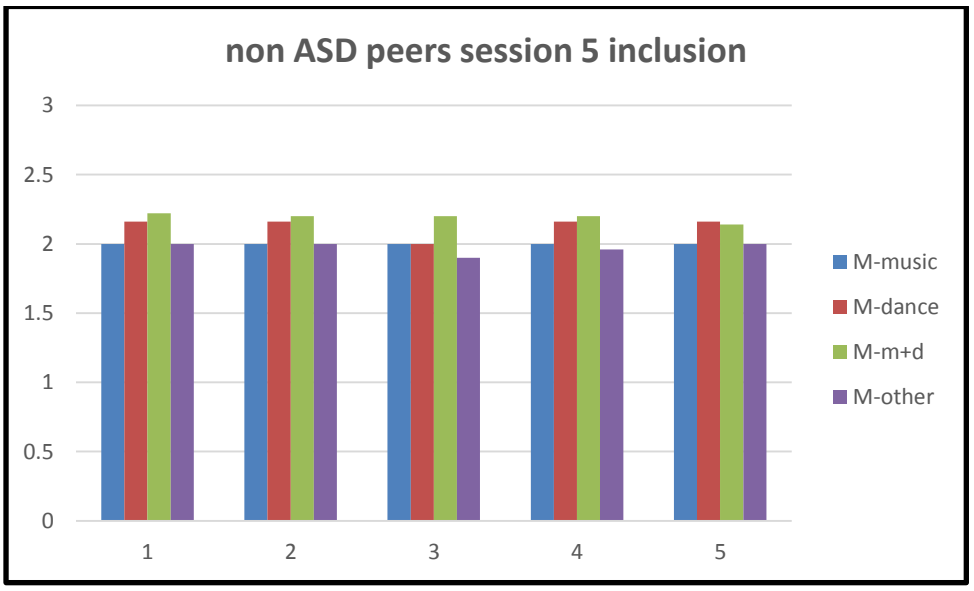
7.5.5.2 Spatial proximity ASC/Non ASC participants

Figure 7.5.5.3 Rosie, session 5: inclusion



Notes N=1, mean score of level of inclusion in session 5 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

Figure 7.5.5.4 Neurotypical peers, session 5: inclusion



Notes N=5, mean score of level of inclusion in session 5during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

Figure 7.5.5.3 clearly shows that Rosie has been included during all tasks consisting of music and dance on their own or combined and has been more away

during other. The neurotypical peers have been in closer contact mainly during music and dance and dance on its own, included during the music task and the two boys slightly excluded during other activities (see Figure 7.5.5.4). The music and dance task of this session was designed to encourage physical proximity and contact but Rosie has been mostly out of the room. For the time she was in though, she was responding to and initiating physical contact with different children as we will see in the table below.

SESSION 5- SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
0-6’	**Other** Room and session set up	Rosie is the first one to come in. She is playing with the monkey. I try to interact with her, throw and catch the monkey and talk to her but without success. Eventually, she catches when I throw it and throws it back to me maintaining eye contact. Ebony comes and Rosie goes near her. She is galloping around the room.		Ebony came in the room. Then the other children come one at a time.	*Approaches peer, initiates* *Responds to physical game*
6’10’’- 9’40’’	**Music** Unplanned activity	Rosie is still dancing and playing. I put on some music for her and she smiles and dances for a while with more intention and controlled movement.		The girls are chatting and enjoying the music. They follow Rosie at times. Adam and Ebony are in the room but away	*Peers occasionally copy R’s dance*
9’50’’- 12’	**Other** Story	Rosie is really near, sitting in the inner circle.		We all sit in the circle. We talk about the story so far and last week’s adventure.	*Included after music/dance*
12’30’’ -	**Music and Dance** Repetiti	Rosie seems very happy and excited when she sees the tunnel. She moves slightly away but maintains eye		They perform the task with success. Peter is following Rosie and helps her. The new	*Repetition of task* *Tunnel*

SESSION 5- SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
15'30''	on of task	contact. When I call her, she joins the line. Rosie is doing really great. The second time to go through the tunnel Rosie remembers to play the instrument.		girl joins in as well beautifully. They do the task with a lot of concentration and without talking, focused and quietly.	*Peer helps R- inclusion*
15'40'' - 16'20''	**Music** Repetition of task	Rosie is on task, listens to the song and spontaneously picks up the rainmaker and plays.		After going through the tunnel three times I put the song on and they sing. Elsa and Ebony are mainly the ones singing as well as Adam.	*R not singing as non-verbal joins in by playing the instrument.*
16'30'' -18	**Music and Dance** Repetition of task	Rosie is dancing to the song and enjoys going through the tunnel and moving around the room.		They want to go through the tunnel but also move to the beat of the song.	*Repetition of task Music and dance*
18'10'' - 23'50''	**Other** Story	Rosie is the last one to sit down but once again joins in. She is quiet and non-fidgety. She is also maintaining good eye contact with me especially when I narrate the part of the story when the monkey is sick. Rosie seems more alert today during the story time and looks at me every time I mention the monkey. She soon though becomes impatient and fidgety and wants to		When the task finishes we sit back in the circle. They are listening with great attention and everyone is participating.	*More focused after music and dance task- seems more alert and interested in story. Story time too long-*

SESSION 5- SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
		stand up.			*movement break*
24'-25'	**Dance** Demo of task	Rosie is doing great especially during the first steps. Rosie hugs Ebony after I explain what we need to do.		We then stand up and I demonstrate the beginning of the dance for this week's task.	*Responds well to touch by others*
25'10'' - 26'50''	**Music and Dance** Task of the week	Rosie hugs Ebony again. Instead of walking around the room she is dancing. She moves slightly away but then re-joins. She seems unsure on what to do but responds well to hugs and copies her peers. The last two times she responds to Tallulah's hug and mine.		I put the music on and Elsa and Tallulah are singing. Peter hugs Rosie.	*At times she is not sure what to do but engaged even though goes away.*
27'- 27'40''	**Other** Transition		When I stop the music so as to do it again and explain the rules she goes away but is still dancing.	They are all waiting in positions for the music to start. They are chatting to each other.	*Transition- music stops away*
27'50'' - 29'30''	**Music and Dance** Task of the week	She is not doing the introduction this time but she is very excited. She goes to the toilet and misses half of the song.		We perform the task one more time.	*Enthusiastic about task- expresses emotions*

SESSION 5- SPATIAL PROXIMITY/ INCLUSION					
Time	Activity	ASC – Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
29’40’’ - 31’30’’	**Other** Story- end of session		She is at the other side of the room. Comes to sit down for the last few seconds; leaves the room hopping.	When the dance is over, Peter takes the rainmaker and sits down. They are all very happy that worked well together.	*Language –away but dancing*

7.5.5.3 Summary of session 5

Session 5

Rosie was a little excitable at first probably due to her day being unusual (she had been out on a trip during the morning). The group revised the tunnel activity and she participated well. For the rest of the session, she needed some prompts from the children to follow instructions. This was probably because she was still adjusting to the unusual nature of the day.

In this session, Rosie has responded very well to physical contact by others, whether as part of the music and dance task or as an attempt from others to help her engage and understand directions relating to the task. She is also initiating contact during the task but also spontaneously at the beginning of the session when one of the girls enters the room.

Overall, Rosie responds well to music and is able to extend the designed tasks and incorporate movement sequences. Her peers recognise her abilities and at several occasions in this session as well as in the previous ones, copy her movements and let her lead. She is also enthusiastic about the music and dance tasks and expresses her emotions through body movements and facial expressions. She responds very well to movement and music and these approaches could be introduced to teach emotions, an area that children with autism find challenging (Katagiri, 2009)

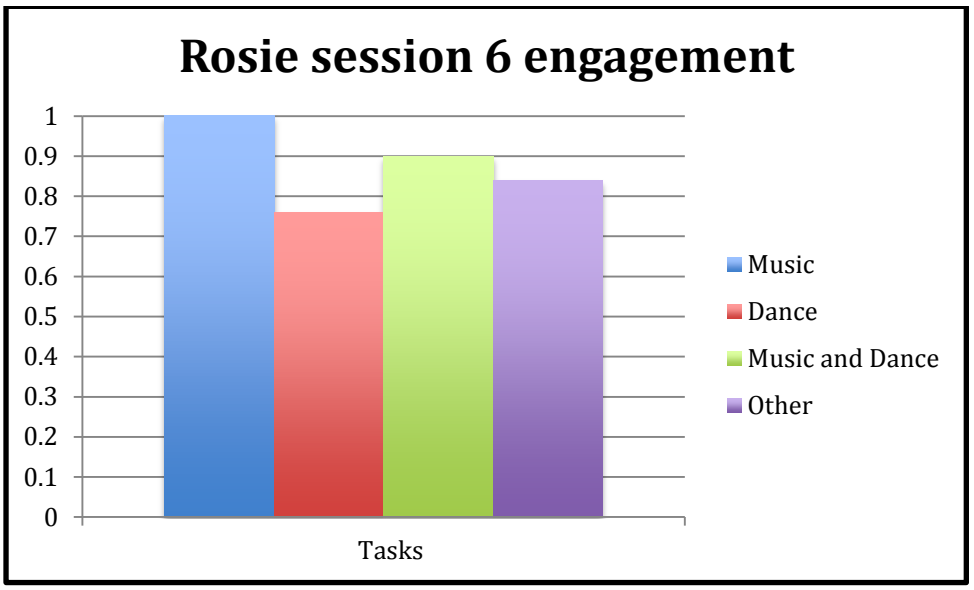
Finally, in this session Rosie shows more interest in the story and is included in the group mainly after a music/dance task. She appears to be more focused and more alert with increasing motivation in the story tasks. Nevertheless, story time appears to be too long and Rosie needs and benefits from movement breaks.

7.5.6 Session 6

7.5.6.1 Engagement on task ASC/Non ASC participants

In the last session of the intervention programme, Rosie was fully engaged during the music tasks, followed by music and dance, dance and finally other (see Figure 7.5.6.1).

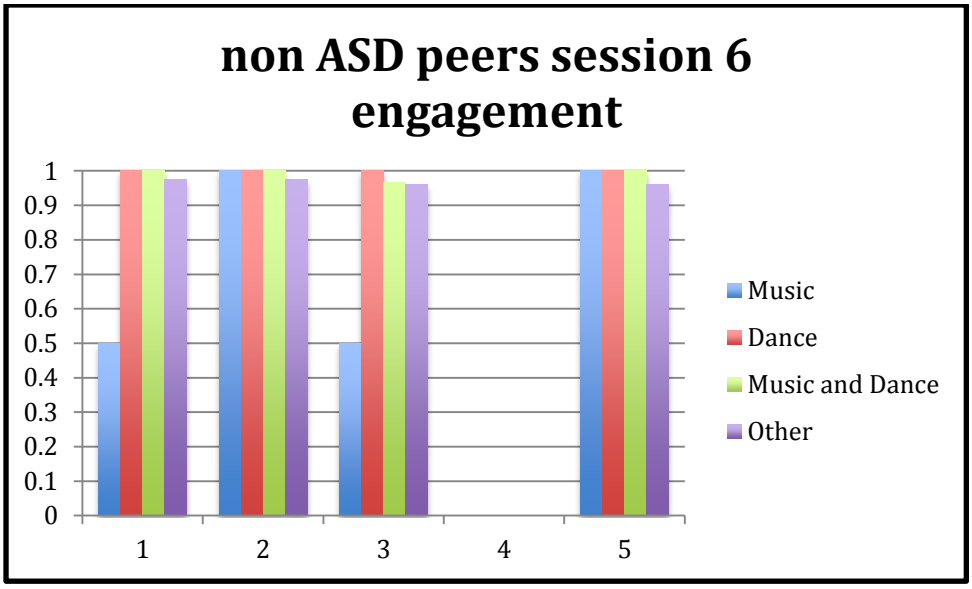
Figure 7.5.6.1 Rosie, session 6: engagement on task



Notes N=1, percentage of engagement on task in session 6 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

Figure 7.5.6.2 below shows the levels of engagement of the other 4 participants. As we can see, there seems to be a pattern in pairs. Participants 1 and 3 score high in dance as well as in music and dance; slightly lower in other and considerably lower during music. The two girls 2 and 5, score the maximum in all music and or dance tasks and slightly lower during the other activities.

Figure 7.5.6.2 Neurotypical peers, session 6: engagement on task



Notes N=4, percentage of engagement on task in session 6 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the percentage of engagement.

SESSION 6- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
0'-1'20''	**Other** Story	Rosie is still standing when everyone else is sitting on the floor. She wants to join the group.		They come in and sit down in a circle. I ask them to make some space for Rosie, which they do straight away.	*More interested*
1'30''-2'10''	**Music** Repetition of task	Rosie seems interested and alert. She smiles when I put the music on. She is still sitting on the floor.		I ask them what we did last week but do not remember so I put the song on to see if it helps.	*More interested* *Show that wants music.*
2'20''-3'	**Dance** Repetition of task	Rosie is sitting on the floor looking at the girls doing the dance. She responds to Ebony who is prompting her to join in. She is now on task and included.		Tallulah demonstrates the routine without the music together with Elsa. Everyone is standing apart from Rosie. Ebony prompts her to stand up and then helps her tidy up.	*Joins with prompting from peers.*
3'10''-5'20''	**Music and Dance** Repetition of task	Rosie does not join in the introduction of the song from the top but during the second part of the solo dance. She hugs twice with Ebony, then with me and then with Tallulah. She is not walking around		They occasionally sing. Rosie, Ebony and Elsa stay in the hug position for long time.	*Does not remember the intro? Complex?* *Great with solo and partner*

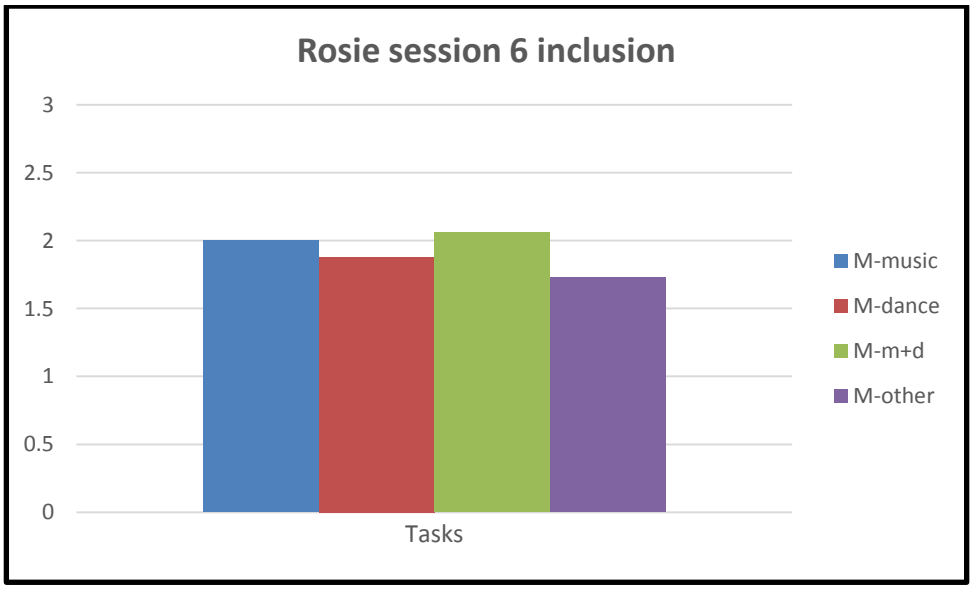
SESSION 6- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
		the room but Elsa helps her to do so and then they hug twice.			
5'30''-15'	**Other** End of story and tasks	Rosie is the last one to sit down. She is looking at the map and is very calm. She saw the ballerina box and seems very excited about it. She comes nearer to explore it. When Elsa reads the note hidden in the ballerina box, she moves slightly back but joins in again very quickly. Rosie has got it already in her hands and seems to really love it. Rosie is now slightly away looking at her mask. She chooses the little presents with the girls' help.		Elsa reads the note hidden in the ballerina box. They solve the riddle and everyone wants to hold the box. They choose Rosie as the most helpful and then Elsa. The two girls open the treasure chest. They take out the maps, rubbers, stickers etc.	*Loves the musical prop- engagement. Chest- understands what she needs to do (modelled by peer, simple language, prop)*
15'10''-17'	**Dance** Practice musical chairs	Rosie is sitting longer while the other children set up the chairs. She is still playing with the monkey. She seems quite confused; she sits down and copies her peers.		The children set up and practice without the music.	*Movement game*
17'10''-19'30''	**Music and Dance** Musical chairs	Rosie needs prompting to stand up and start the game but she follows greatly running around. R is the first one out. I ask her to come and help me		Tallulah is the next one out. All playing nicely in the group.	*Music and movement task Out but has got a role (music).*

SESSION 6- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
		play the music. She presses the play button to start and I do the rest. Rosie wants to join again but she is dancing and jumping looking at them. She seems very happy.			*Continues to dance even if out of game*.
19'40'' - 21'20''	**Other**		Rosie seems unsure of what to do.	We put the chairs away and I say '*It is time to finish*'. They don't want to finish the session so they refuse to put the animals back in the bag. They say they want more.	*Unstructured- unsure*
21'30'' -22'	**Music and Dance** Last song/dance	Rosie is jumping with joy		I put the Dora song on and they dance and sing. They don't want me to stop the music. Adam is dancing by himself like never before. The bell rings and now they need to go. I tell them that is time to say goodbye. Elsa and Ebony say: '*Rosie and Peter were*	*Music and dance task*

SESSION 6- ENGAGEMENT ON TASK					
Time	Activity	ASC - On task	ASC- Off task	Non ASC participants	Interpretations
				great, we had fun'. They put the song on one more time and dance freely around the room mainly Adam, Elsa and Ebony.	

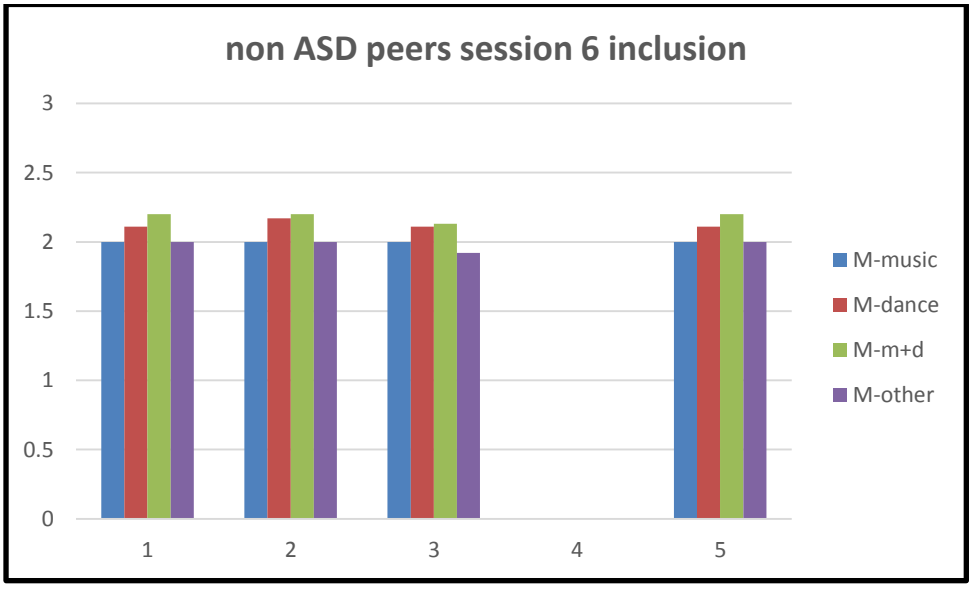
7.5.6.2 Spatial proximity- ASC/Non-ASC participants

Figure 7.5.6.3 Rosie, session 6: inclusion



Notes N=1, mean score of level of inclusion in session 6 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

Figure 7.5.6.4 Neurotypical peers, session6: inclusion



Notes N=4, mean score of level of inclusion in session 6 during the different tasks. X represents the tasks (music, dance, music and dance, other) and y the level of inclusion (3= highest score).

In the last session of the programme, all participants show homogenous scores in terms of their physical/spatial proximity and inclusion in the group. All the children are more included during and dance and less included during other. Music and dance on their own come second in the scoring for Rosie and her peers respectively (Figures 7.5.6.3 and 7.5.6.4). Overall, it has been a good sessions with minor differences in the scores. As we will see in the qualitative analysis that follows, her peers really respect Rosie, enjoyed the programme and acknowledge her impact on the sessions.

SESSION 6- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC - Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
0'-1'20''	**Other** Story	Rosie is still standing when everyone else is sitting on the floor. She wants to join the group.		They come in and sit down in a circle. I ask them to make some space for Rosie, which they do straight away.	*More interested wants to be included*
1'30''-2'10''	**Music** Repetition of task	Rosie seems interested and alert. She smiles when I put the music on. She is still sitting on the floor.		I ask them what we did last week but do not remember so I put the song on to see if it helps.	*More interested Show that wants music.*
2'20''-3'	**Dance** Repetition of task	Rosie is sitting on the floor looking at the girls doing the dance. She responds to Ebony who is prompting her to join in. She is now on task and included.		Tallulah demonstrates the routine without the music together with Elsa. Everyone is standing apart from Rosie. Ebony prompts her to stand up and then helps her tidy up.	*Joins with prompting from peers.*
3'10''-5'20''	**Music and Dance** Repetition of task	Rosie does not join in the introduction of the song from the top but during the second part of the solo dance. She hugs twice with Ebony, then with me and then with Tallulah. She is not walking around		They occasionally sing. Rosie, Ebony and Elsa stay in the hug position for long time.	*Does not remember the intro? Complex? Great with solo and partner Enjoys physical contact and*

SESSION 6- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC - Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
		the room but Elsa helps her to do so and then they hug twice.			*proximity*
5'30''-15'	**Other** End of story and tasks	Rosie is the last one to sit down. She comes next to me, in the inner circle. She saw the ballerina box and seems very excited about it. She comes nearer to explore it. When Elsa reads the note hidden in the ballerina box, she moves slightly back but joins in again very quickly. Rosie has got it already in her hands and seems to really love it. Rosie is now slightly away looking at her mask. She chooses the little presents with the girls' help.		Elsa reads the note hidden in the ballerina box. They solve the riddle and everyone wants to hold the box. They choose Rosie as the most helpful and then Elsa. The two girls open the treasure chest. They take out the maps, rubbers, stickers etc. They keep some toys for Peter who was absent today. They stand up to leave them on the side and talk about Rosie's mask that she coloured beautifully.	*Loves the musical prop- engagement- inclusion Chest- understands what she needs to do (modelled by peer, simple language, prop) Comment on Rosie's beautiful art work- inclusion*

SESSION 6- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC - Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
15'10'' -17'	**Dance** Practice musical chairs	Rosie is sitting longer while the other children set up the chairs. She is still playing with the monkey. She seems quite confused; she sits down and copies her peers.		The children set up and practice without the music.	*Movement game*
17'10'' - 19'30''	**Music and Dance** Musical chairs	Rosie needs prompting to stand up and start the game but she follows greatly running around. Rosie is the first one out. I ask her to come and help me play the music. She presses the play button to start and I do the rest. Rosie wants to join again but she is dancing and jumping looking at them. She seems very happy.		Tallulah is the next one out. All playing nicely in the group.	*Music and movement task Out but has got a role (music)- self esteem Continues to dance even if out of game. Included in the game*
19'40'' - 21'20''	**Other**		Rosie seems unsure of what to do.	We put the chairs away and I say '*It is time to finish*'. They don't want to finish the session so they refuse to put the animals back in the bag. They say they want more.	*Unstructured- unsure*
21'30'' -22'	**Music and Dance**	Rosie is jumping with joy		I put the Dora song on and they dance and sing. They don't want me to stop the	*Music and dance task- included*

SESSION 6- SPATIAL PROXIMITY/INCLUSION					
Time	Activity	ASC - Included or In contact	ASC- Excluded	Non ASC participants	Interpretations
	Last song/dance			music. Adam is dancing by himself like never before. The bell rings and now they need to go. I tell them that is time to say goodbye. Elsa and Ebony say: '*Rosie and Peter were great, we had fun*'. They put the song on one more time and dance freely around the room mainly Adam, Elsa and Ebony.	

7.5.6.3 Summary of session

Last session-summary

The sessions were very valuable for Rosie's social skills. She responded very well to music as a source of motivation, enjoyment, expressions, following sequences of instructions and initiating social interaction. Her eye contact improved and she quickly became focused on Tina during the seating listening times. Rosie would sometimes echo fragments of instructions, which may have been a way of internalising them and/or showing the will to express herself in a vocal way. This project is to be highly recommended as a means of promoting social interaction for children with ASC.

The intervention programme ended with a great session during which the children scored highly both in relation to their participation on task and in their inclusion in the group. Rosie appeared to be once more increasingly interested in the story parts of the session and wanted to sit in the inner circle, being closer to her peers and more included.

She showed her preference for music and dance tasks and was able to join in all activities with some prompting from the other participants. When repeating last week's session, she did not join in the intro of the song, probably because the dance sequence taught was fairly complex to remember. All participants were unable to remember and describe the task initially but as soon as I played the song they remembered and knew what to do. It might have been useful to go through the intro dance sequence once before practicing the task. Rosie was very good during the dancing solo part and during the partner section she enjoyed physical proximity and contact.

The use of props has been also in the session a successful strategy to motivate Rosie and help her engage in the story or other task. This week she loved the musical box and the chest. She was chosen by the group as the one who was the most helpful throughout the sessions and together with the second girl chosen they had to open the chest and give out the presents and masks. Rosie understood what she needed to do at that moment. This could be due to the fact that there was an object to help understanding, the action was modelled by a peer and simple language was used to describe the task. When tidying up the gifts, her peers commented on the beautiful colouring that Rosie had done for her mask during the first session.

At the last musical chairs game, Rosie even though she was out of the game first, she stayed in the periphery dancing and also as she was given a special role- to turn on/off the music with me she remained near the group happy, engaged and included. This can be used as a strategy to help raise the self-esteem and participation of children who 'lose' first when playing this type of familiar children's games.

7.6 Conclusion

Chapter 7 presented a detailed analysis for the second case study in the project. The analysis of the sessions showed that overall Rosie was more engaged and included in the group when a task involved music and dance. Tasks combining music and dance were also found to promote engagement and spatial proximity for all participants. The charts in each session showed the scores of the participants and the tables revealed in detail the interactions between children and their levels

of engagement throughout the session. Main findings were discussed at the end of each session analysis.

The intervention programme that took place in this school with a Y3 group was the second in this research study. Most sessions run smoothly as part of a special lunchtime club and sometimes Rosie would arrive late as she had not completed her meal. The SENCo as well as some pupils provided very positive feedback. Levels of engagement were high especially during music and dance tasks and all pupils worked well together. Together with the findings from the first case study provide important insights into how and why music and dance can be beneficial for pupils with autism and their peers in terms of their socialisation and participation on task and in the group. The results also indicate different successful strategies used throughout the programme as well as the barriers to inclusion and engagement of pupils with autism.

Chapter 8 Discussion

8.1 Introduction

In this chapter, the aims and hypotheses of the study are reconsidered as well as the specific research questions in relation to the inclusion of pupils with autism in mainstream education. The main findings are also further interpreted in relation to the literature review. Strengths and limitations of the design and study are acknowledged before discussing the implications for practice and recommendations for future research.

8.2 Aims and research questions

The aim of the research was to explore the impact of music and dance on the social inclusion of primary-aged children with ASC. In particular, it sought to discover how pupils across the spectrum can benefit from music and dance/movement sessions in terms of their interaction with their peers and their socialisation, thus enhancing their effective inclusion. It is recognised that measuring the degree of social inclusion over a period is challenging, and the research was focusing on particular elements of inclusion – spatial proximity and participation in task – as proxy measure of successful inclusion in the educational process.

The research questions were to what degree music, dance or a combination of both could promote the participation on task and the inclusion of 5-8 year-old pupils with autism attending mainstream schools.

With respect to the research question on participation on task, it was found that pupils with autism were more engaged during music tasks mainly in relation to

other language-based activities. Inclusion of autistic children in their group of peers was enhanced by combined music and dance activities. Neurotypical participants were more engaged on task and included in the group during music and dance.

The main findings from the quantitative analyses, detailed case studies as well as all other data (monkey task, repetition of task, observation checklists) can be divided into three parts: the ones relating to music, the ones around dance and the ones that are more generic, relating to autism itself and different approaches used throughout the interventions. These are explored in terms of the way they enhance engagement and motivation on task and therefore participation and inclusion.

8.3 Summary of findings

Results from the quantitative analysis of the observation data showed that autistic pupils were more engaged during music and then during music and dance especially in relation to 'other'. Neurotypical peers were also more engaged in all three tasks as opposed to other, with slightly higher scores during music and dance combined. Interestingly, all participants were equally engaged only during music throughout the intervention programme. Autistic children were more included in the group during music and dance followed by dance and similar was the case for their neurotypical peers. The findings were reiterated by the detailed case studies and the analysis of the sessions and by the repetition of task analysis.

The results of this study indicate overall that music and dance:

- Can promote engagement and inclusion for pupils with autism and their neurotypical peers. Children with autism were more engaged during music tasks and more included in the group when involved in music and dance activities as shown in the findings from the statistical analysis and reinforced by the qualitative data.
- Can have a calming, relaxing effect for autistic children and help them organise their responses to sensory stimuli and adapt to the challenges of the environment. This finding was evident form the case study analyses which showed how pupils responded to music and movement in relation to other tasks. The pupils were able to stay on task during music and dance. Movement was found to help pupils, seeking more physical activity, regulate their vestibular systems. Music tasks helped them relax and focus on tasks even when sitting on the floor was required.
- May be used to teach social and emotional understanding and expression. The analysis of the observation checklists completed by the teachers before and after the programme showed that pupils improved in all areas, including in their emotional expression. Rosie, the autistic pre-verbal girl, was able to express her emotions through her dancing and listening to music and connect with her peers in the group.
- can enhance verbal language and communication. The case studies showed that pupils were motivated during music and dance tasks and used vocabulary linked and/or taken from the story. Nonverbal communication and interaction of pupils was more frequent during music and dance tasks as shown for the analysis of the mixed data.

Other important findings were that:

- Verbal language, transitions between tasks and following instructions can be challenging for pupils with autism and therefore constitute a barrier to participation and inclusion.
- Repetition of sessions, settings and tasks may be valuable to achievement and high performance as well as promote focus on activities and inclusion in the group.
- The use of tactile and visual props as well as the art tasks enhanced engagement and enjoyment. A similar effect was noticed with the use of musical instruments.
- It appears that using the interests of children with autism and incorporating them into the teaching material and process can enhance motivation and engagement.

8.4 Contribution to knowledge

The present study looked at the benefits of music and dance for young pupils with autism attending mainstream settings in terms of their engagement on task and inclusion in the group. It makes several noteworthy contributions to the following areas:

- It is the first study to examine and compare the benefits of music, dance and music combined with dance, in relation to a story for pupils with autism in an inclusive group setting. It is undertaken under a philosophical framework of inclusive education in comparison to most similar studies in the field of either music and/or dance therapy.

- The study is original in terms of the intervention programme content as well as the measures used to assess inclusion. The study is unique and original regarding the tasks of music and dance that were designed specifically for this programme. The programme can be followed, and in the future replicated, by any teacher without specialism in autism, music or dance.

- This project provides a methodological framework for the exploration of the benefits of music and dance and the evaluation of engagement on task and inclusion. Using a mixed design and a range of data collection tools, the present study contributes to the existing methods. The 'monkey task' is unique and links to the story of the intervention. It is a well-documented project ensuring high levels of validity and reliability.

- The present study confirms previous findings and contributes additional evidence that suggests that music and dance can enhance the inclusion of pupils with autism spectrum in relation to their engagement on task and physical proximity with the group of neurotypical peers. In particular, it was found in the present study that:

Music, in comparison to verbal cues or object props, helped participants remember and perform the activity they have learnt the week before. Analysis of the 'repetition of task' per session showed that children were able to recall the task when they heard the music piece or saw the musical instrument.

Music and dance as well as art tasks complemented the story (language based task) and made it more motivating for pupils to be engaged and included in the group. Consequently, music/dance and art can be used to complement the literacy curriculum specifically for individuals with autism.

8.5 Generic findings related to autism

The following aspects have been found to be challenging for pupils with autism and therefore constitute a barrier to participation on task and inclusion to the group. The statistical analysis showed that pupils with autism were far less engaged during language based tasks (other tasks) and the case studies revealed when in particular and why autistic children were off task or away from the group.

Verbal language and following instructions.

Quantitative analyses of the sessions overall showed that pupils with autism were less engaged and included in the group during other activities, which were mostly language based. Friedman's ANOVA and Wilcoxon tests measuring the engagement and inclusion of pupils according to the task involved showed significantly lower scores during 'other', i.e. story, language based tasks in comparison to music and/or dance tasks. The detailed qualitative analysis of the sessions in the two case studies confirmed this finding and emphasised how language was a barrier for participation on task and physical proximity with the peers. Both pupils with autism were mostly off task and away during story time or transitions throughout the intervention programme, in most sessions. As we have seen in Chapter 2, communication is an area in which pupils with autism face challenges and is part of the diagnostic criteria. These findings are in accord with those of Carnahan et al. (2009) who explain that individuals with autism often struggle to process complex verbal information, which is the main strategy used by teachers in education whether it is for communicating academic content or any other information.

Transitions between tasks and needing to finish each task before moving to the next.

The analysis of the case studies of the two pupils with autism showed that they both found it difficult to transition between tasks especially when the task they were first involved was incomplete. At those transition times they were mainly off task and excluded from the group. This is reflected also in the quantitative analyses, which showed that during 'other' children with autism were mostly off task and away from their peers. Similarly, the finding is strongly supported by the literature. Many studies report that individuals with autism have difficulties in transitioning between different activities, areas and settings (Earles et al., 1998; Bryan and Gast, 2000; Prizant et. al, 2003; Cihak, 2011). Therefore, these results support previous research on identifying transitions as a challenge for children on the spectrum.

Shifting attention and joint attention

The difficulty of children with autism to shift their attention between people and objects but also to share interest or attention with another peer or adult with respect to a motivating object/task has been extensively reported in the literature. (Swettenham et al. 1998; Jones, 2004; Schertz and Odom, 2004). This seemed to have been the reason why often the girl with autism, in the second case study, presented in Chapter 7, seemed to be unable to remain interested in a new activity especially when this involved language and when instructions were given to move into a different activity (Rosie session 1 and 2).

The findings above highlight some of the difficulties that pupils with autism may face when they are involved in a session or series of activities in a group and which

were evident from the detailed analysis of the case studies. The focus of the next section will be to present the findings regarding the approaches and strategies that seemed to promote participation on task and inclusion in the group throughout the intervention, even when 'other' activities were in place.

8.6 Strategies and approaches with positive impact

A range of different strategies has been found to have a positive impact on the engagement and inclusion of pupils with autism as revealed from the detailed analyses of the sessions in the two case studies and repetition of task. These are as follows:

The use of visual aids as well as props is beneficial in improving understanding and promoting engagement.

The emphasis on the use of visual supports has been extensively documented in the literature (Mesibov 1997; Siegel, 2000; Wilkinson and Twist, 2010) and found to be necessary for an intervention to be effective (McConkey et. al, 2009) for pupils with autism. Using props/ actual objects relating to the story during the intervention, through the analysis of the case studies, has been found useful to aid transitions and motivate pupils with autism to join in and be part of the group. It also seemed that the actual objects from the story and activities helped pupils remember the task they were asked to repeat (see repetition of task chapter 5 and chapter 8.5.3). This finding goes in line with the documented use of 'objects of reference' when teaching children with autism. Objects of reference are everyday objects that represent activities, people or places. Most often they are the actual objects used in these tasks (e.g. plate to represent lunchtime) and can prepare a young pupil for an event that follows or to make a choice (Ockelford, 2008).

Objects can therefore be used in literacy sessions to help pupils join in, motivate them and complement language, therefore promoting understanding. The use of tactile and visual props enhanced engagement and enjoyment. Similar effect was noticed with the use of musical instruments, which will be further explored in the following sections. The use of props has also been documented in dance movement therapy for children who are socially isolated by enabling 'the child to tolerate a relationship that might be too threatening if carried on more directly' (Erfer, 1995: 201).

Children with ASC benefit from structure, order and predictability. The use of pre-planned strategies and tasks, routines and visual supports can serve this function and help to reduce stress and manage anxiety.

Routines often serve an important function - they introduce order, structure and predictability and help to manage anxiety (NAS, 2015). I found in the present study that when tasks and sessions were repeated, pupils with autism were more engaged and included in the group, as they were familiar with the structure of the session, the content of tasks as well as with the setting, adults and other participants (see chapter 5). This finding goes in line with the elements that Dawson and Osterling (1997) identified as essential for intervention programmes to be effective. Among these, they stressed the importance of focusing on specific skills that the children need to learn, having a structured environment and ensuring predictability and routine to help the child transfer from one activity to another.

Art activities have been used to complement language based tasks in the intervention and were found to make literacy tasks more motivating for all participants.

The use of visual arts (drawing, painting, sculpture, and other art forms) in the education and therapy of children with autism has been extensively documented in the literature (Osborne, 2003). Incorporating art and craft activities into the curriculum, and in this case in literacy, to make stories lively and encourage pupils to participate through multi-sensory learning experiences has been at the centre of teaching. Especially in the early years, storytelling is enhanced by the use of story sacks: large cloth bags containing a favourite children's book with supporting materials to stimulate language activities and make reading a memorable and enjoyable experience. As story sack usually consists of the main book and other related books, models, objects and props from the story, a CD or DVD of the story and art materials such as paper, crayons, plasticine (Literacy Trust, 2016). In the present study, story props were found to be motivating for pupils during story time as revealed in the two case studies and also in session 1 with both groups, the colouring mask activity,

The above section presented the main findings around the different areas that were found to be difficult for children with autism and possible barriers in accessing parts of the intervention programme and in particular the story and tasks involving language. It also showed what approaches enhanced autistic pupils' engagement and inclusion in the group, such as the use of art related tasks and story props. Among the different story props, musical instruments were also shown to have positive impact on the engagement on task. The impact of music related tasks and activities on the engagement of pupils with autism will be further explored.

8.7 The benefits of music for pupils with autism

8.7.1 Engagement on task

Participants with autism, as shown by the statistical analysis, in Chapter 4 were more engaged on task when music was included in the task. They participated the most during music followed by music and dance and were less engaged during other. All other participants were mostly engaged during music and dance and less during other. Overall, neurotypical participants were on task for longest periods of time throughout the intervention programme. However, during music only, autistic pupils were equally engaged as their non-autistic peers.

The analysis of the repetition of task variable (Chapter 5) showed that music was the predominant cue, in 16 instances, throughout all groups and sessions that helped participants remember the task from the previous session that they were asked to perform. This was followed by the use of props from the story, in around 13 occasions followed by verbal cues in seven of those.

This finding is compatible with the results of the study by Kim et al. (2008). The study compared the effectiveness of improvisational music therapy and play sessions with regard to the facilitation of joint attention and nonverbal social communication skills for ten boys aged 3-5 years. Results showed that improvement in joint attention behaviours was greater in music therapy than on toy play condition. Eye contact duration was significantly longer in music therapy than in play and the same applied for turn taking duration, which was longer in music therapy sessions.

8.7.2 Spatial proximity/inclusion in the group

With regard to the second variable, autistic children were more included in the group during music and dance followed by dance. Neurotypical peers were also more included during music and dance. This suggests, that music is effective in both variables and when involved in a task that includes music, children with autism are more engaged and included in the group. Dance, together with music seems to promote physical proximity and contact for pupils with autism and their peers, who seem to benefit from music and dance combined in both conditions, engagement on task and inclusion in the group.

8.7.3 Repetition of task

The analysis of the repetition of task variable (Chapter 5) showed that music was the predominant cue for children to remember the task they had learnt the week before. It was evident from the analysis of the sessions that as soon as the pupils heard the music piece or saw the musical instrument they could remember the task and perform it accurately. The difference was particularly strong in the situations when a verbal cue helped children recall the task. This could be due to the fact that for children, especially for those on the autism spectrum, music is easier to recall and reproduce compared with language (Ockelford, 2013). Although in the majority of cases music was the cue that helped pupils recall, props from the story were also found to be useful. The use of visual aids and actual objects props increased engagement on task and understanding of the verbal information (story; see also section 8.4). However, taking into consideration that music was the cue that helped the most, it is worth considering the role of auditory and input in a

range of strategies and approaches when working with pupils with autism, which currently are mostly visual. Ockelford (2008) suggests that is worth looking at 'the potential impact that sound, both planned and unplanned, may have, positively or negatively, on their well-being and capacity to learn (Ockelford, 2008: 15).

8.7.4 The impact of music on other areas of functioning

The qualitative analysis of the sessions from the two groups produced the following findings:

Music can be a powerful tool for relaxation during the intervention programme, having a calming effect facilitating engagement and inclusion.

The study has shown that music throughout the sessions, when incorporated in the lesson plan as a task on its own or as part of the music and dance task, had a positive impact on the children, helping them to relax and regulate their energy levels and sensory overload. Music has also been used at times towards the end of the session before the last storytelling part to help children wind down and be ready to listen and re-engage. Classical relaxing music has been mainly used for this purpose. As revealed in the case studies, pupils were more engaged on task and included with their peers after a music/movement task. It is reported in the literature that often occupational therapists use music at the start of their sessions to prepare children for therapeutic activities. It is based on the belief that music is seen as a sensory input through the auditory and vestibular systems can have a calming effect on children and helps them to organise the degree and intensity of sensory input- making them ready for action (Ayres, 1979; Frick and Hacker, 2001).

Music used to complement language based activities has made storytelling a motivating task, which helped in the engagement on task.

This finding is compatible with the results reported by Carnahan et al (2009) who noticed an increase in engagement on task when the facilitator used interactive materials combined with music. On the other hand, when they used the interactive books without music, some participants demonstrated lower rates of participation on task. Similarly to the findings by Kern and Aldridge (2006), more effective was the combined use of visual support and music. It has also been suggested by several studies (e.g., Dunlap and Koegel, 1980; Kern et al., 2007) when a child participates in highly preferred activities, such as music, s/he is motivated to engage and complete a task or activity that was otherwise considered undesirable. The use of music as a motivational tool as an agent of agent in other areas of functioning has been recommended by Koegel and Koegel (2006) and Finnigan and Starr (2010).

Music had a positive impact on the development of verbal language in children with autism.

Music, especially when used throughout the programme to complement storytelling, and combined with the use of props, was found to motivate pupils and encouraged them to use verbal language relating to the story. With regard to verbal development, Lim (2010a, 2012) who examined the effectiveness of music and speech training on speech production for young people with autism found that especially for low functioning participants, speech production was higher during music. It has also been found that music tasks can promote the use of gestures, sign

language and other means of non-verbal communication in autistic children. (Buday, 1995).

Music was found to be a powerful tool in promoting spontaneous movement during music based tasks as well as more structured dancing from the part of the pupils.

In various occasions throughout the intervention programme, as soon as the music started playing pupils would start moving either by improvising steps or would follow the steps routine learnt during the sessions. Although music has been used in dance education and therapy for many years to support and accompany movement (Alvin, 1975), it is worth examining further the relationship between music and movement and the potential benefits when incorporating one element into the teaching of the other.

8.7.5 Then… why music?

Music has been found to be the most motivating task for pupils with autism throughout the intervention in the present study. Music was the key for pupil engagement on task and cue for them to remember tasks from the previous sessions. It was also evident from the videos that pupils were calm, happy, focused and less anxious when music was involved in the task. On the contrary language based tasks were a barrier of participation and a source of confusion and anxiety, leading pupils to become absorbed in self-chosen activities and disengage from the main task.

These findings lead to the question of why music has that power to motivate and impact so positively on children with autism. Autistic individuals respond to music as it is highly repetitive, has well defined patterns with clear start and finish and predictable features. As it has been discussed throughout this thesis, these elements are essential for autistic people in all areas of their everyday lives. Ockelford (2013) suggests that 'it is as though music, with its reliance on repetition, could have been especially devised for those on the autistic spectrum' (op. cit.: 99).

Recently, the advances in neuroscience and the extensive research in examining the brain has also made reference to music and its importance for children with autism, especially for communication development, interaction and expression (Wan et al., 2010). The authors add that there seems to be an overlap between the language and music systems in the brain and it is therefore suggested that being involved in music making either through singing or playing an instrument can engage this system in the brain (Wan et al., 2010).

The findings have also strongly emphasised the difference of engagement and inclusion levels for pupils with autism between music based and language based tasks. The difficulty of processing and using language is extensively presented in literature and is a core feature of autism, whereas music is an area in which a large number of individuals with autism may even excel. It is consequently worth exploring the reasons for this and comparing music to language. According to Ockelford (2013), both language and music can be seen as 'human forms of communication that occur through streams of sound (heard or imagined) "chunked" in cognition' (op. cit.: 62). The difference though, as Ockelford explains, is that language is very complex and in order for messages to convey meaning different elements are incorporated such as: syntax, social context,

metaphor, semantics. On the other hand, music highly repetitive and does not (usually) have a symbolic function. Ockelford (2013) argues that 'the musical relationship is simpler because it exists between phenomena in the same sensory modality (sound), because musical events (notes) tend to be simpler perceptually than linguistic events (words) and because there is none of the ambiguity associated with semantic relationships' (op. cit.: 169).

This section examined the findings of the analysis relating to music and the specific benefits for participants with autism mainly in comparison to language-based tasks. The next session looks at the positive impact on dance which is often linked to music.

8.8 The benefits of dance for children with autism

8.8.1 Engagement on task

The quantitative analyses of the data showed that pupils with autism were mostly engaged during music followed by music and dance in relation to other activities. Dance when executed as a task on its own was not statistically significant in relation to other tasks. Therefore, when dance is accompanied by music there is an increase in engagement. Neurotypical peers were mostly engaged during music and dance combined. This finding is compatible with the results by Hartshorn et al. (2001, see chapter 2) who reported an increase in engagement on task for the children with autism who participated in the dance therapy sessions. The authors reported that although there was an increase in engagement participants were not fully engaged at the end of the intervention. Also, although music was used in the intervention, it was mainly a dance therapy programme.

Overall, it is acknowledged that there seems to be a dearth in the literature examining the benefits of DMT interventions for young people with autism (Rosenblatt et al., 2011) and most existing evidence comes from anecdotal reports (Hartshorn et al., 2001).

In relation to engagement on task, the qualitative analysis showed that:

Dance routines are easier to learn through copying/mirroring and therefore promote active engagement.

This finding could be seen as compatible to the findings of Boettinger (1978) who evaluated mirroring in 3- to 9-year-old females with ASC. The author reported, on one hand an increase in synchronised movements and interaction gestures, and on the other hand a decrease in tuning out behaviours. It was found in the present study that dance is a valuable tool in enhancing concentration on task through simple activities and without the need of excessive verbal language, which can be considered a barrier for pupils on the autism spectrum.

8.8.2 Spatial proximity/inclusion

The statistical analysis with regard to the variable of physical proximity/inclusion showed that pupils with autism were mostly included during music and dance in relation to other tasks but also in relation to music. Therefore, dance seems to be the key for increase in spatial proximity, physical contact and inclusion. Deveraux (2012) similarly reported that through her personal experiences of using dance movement therapy with individuals with autism noticed an increase in the tolerance of physical touch. This finding was further supported by the case study

analyses which revealed that dance was a medium to encourage physical proximity and contact with others. The case studies looking at the tasks into more detail showed that:

The circle in dance can be used to create spatial awareness, cohesion and also promote physical contact and inclusion.

The use of circle in groups, whether in dancing, sitting in a circle during music making or during more general educational sessions such as circle time is broadly documented and common practice among practitioners. Circle enhances physical proximity, feeling of belonging, eye contact and mirroring movements and facial expressions.

Dance was found to be a fun and enjoyable activity, especially by the child described in the second case study- boosting self-awareness, self-esteem and confidence.

The monkey task also supported this finding by showing the acceptance from peers by the end of the intervention. Although it is unsure whether this is due to dance in particular in comparison to the participation in the whole programme, in case study two – presented in chapter 7- peers admired the dancing of the girl with autism and rated her as the most helpful character in the group. Siegel (1973) undertook a nine-month dance therapy intervention with young children with autism in a special needs setting involving both music and body contact. Siegel reported positive findings around ‘body-image building and formation of a sense of ‘self’ (Siegel, 1973: 141).

8.3.3 The impact of dance on other areas of functioning

Dance and music can be used as an effective approach to teach emotions to children with autism.

It was made evident throughout the detailed analysis of the intervention sessions and based on the observation checklist completed for all seven pupils. According to the analysis of the checklists completed by the teachers all pupils with autism who took part in the music and dance intervention programme showed significant progress in all areas of functioning and mainly in initiating social interactions, emotional expression, social behaviour/play and proximity.

Deveraux (2012) also noticed that dance therapy sessions were effective in developing empathy for children with autism, which is often characterised as an area of difficulty. The author highlights that her findings despite being promising are mostly based on qualitative case studies. The current study adds to the current literature by presenting findings using a range of quantitative and qualitative methods in the collection and analysis of the data. It has also been suggested that listening to music can produce a range of intense emotions in individuals with autism (Allen et al, 2009)**,** who present difficulties in understanding, processing and managing emotions (Hill, 2004).

Dance and music when put in the centre of familiar children's games already including movement or music, had an impact on engagement and inclusion in the group.

It was also found that when a role was given to the children who came out of the game first (e.g. starting/stopping the music during musical chairs game) was beneficial with regard to children's staying on task and minimising their feeling of losing. Similar movement games based also on children's songs and nursery rhymes have been used by dance and movement therapists as they provide repetitive rhythmic stimulation, helping the child to hear and feel different rhythms and also to promote communication. As Martin (2014) explains, games that involve turn taking and back and forth movements encourage the link between the non-verbal physical movements to the verbal back and forth pattern of communication. Similarly, Ockelford (2013) explains how music can enrich verbal messages in different ways by the use of counting songs, playground game songs or action songs or even songs that tell a story by 'imbuing them with extra colour and interest' (op.cit.: 186).

8.8 The intervention as a whole

The analysis of the mixed data (Chapter 5) as well as feedback from teachers presented in the case studies (in *italics* in Chapters 6,7) revealed that overall the intervention had positive impact on the individual pupils with autism and their relationship with their peers. Children enjoyed the sessions, especially the music and dance tasks and the games involved, linked to the story. For pupils with autism it was evident that they were more engaged and included during music and movement tasks, which could have been the main reasons for their developing in

the different areas rated in the observation checklist. Pupils with autism showed improvement in all areas of social interaction such as joint attention, maintenance of proximity and working alongside others, imitation and turn-taking, initiation of interaction and social play. This is in line with the findings of Vaiouli and Schertz (2012) who showed how music therapy promote pro-social and social interaction for three young children with autism by offering opportunities for increased joint attention, reciprocal engagement, and interpersonal responses.

These findings are reinforced by most from the monkey task, which showed how the peers included the child with autism and changed their views for that child by not offering the monkey, or by choosing the animal character that the child with autism had chosen. It is therefore suggested that music and dance promote a sense of belonging and enhance inclusion.

8.9 Contribution to the inclusion literature

Music and dance were the main focus of the study and examined the benefits of the two approaches for children with autism in relation to their inclusion in their group of peers. A philosophical framework of inclusive education drove the research and therefore it seems important to dedicate a section of this chapter to the philosophical framework around disabilities, special education needs and inclusion. The intervention programme took place in mainstream settings and was designed based on educational grounds, methods and framework. As seen in Chapter 2, most music and dance interventions have been carried out within a therapeutic model, mainly in special education settings, involving mostly a single participant or small group of children with disabilities. Location of schooling, mainstream or specialised setting, by itself is debatable in the academic and

professional agendas when referring to inclusion of children with disabilities and especially those with autism. Furthermore, the use of language in the two disciplines, education and therapy, is contrasting and relates to the wider contrast between the social and medical models of disability, and conceptualisation of the concerned themes (needs, disabilities, inclusive education).

In this section the aim is to take a position in the debate and discuss my stance on the matter as well as ways forward for practice and research. As discussed in Chapter 2, the therapeutic use of music and dance is closely linked to special education and specialised settings and the language used links to the medical model of disability. The terms used within this approach as seen in chapter two, mainly have medical background and when used in educational setting could be seen as 'exclusionary' and focusing on the impairments of the patients. Nevertheless, this is not to argue any less that music and dance therapy could be introduced in education and the two disciplines in collaboration could enhance advancement in theory and practice. However, once again the question is how we conceptualise different needs and inclusive education.

8.9.1 Language

The use of language is critical in the discussion and debate around special educational needs, disability, inclusion and fundamental tool in the battle for social equality. If we want to achieve educational and social inclusion for all individuals, including those with disabilities, emphasis should be place on the language, which affects also the way society views and accepts difference. Particularly in this study one of the main reasons for supporting an educational approach of music and dance was the inclusive language and underpinning of ideas.

Language is central to any educational agenda and has a major role in framing mind-sets and impacts on policy and practice. In relation to disabilities, language influences how society and culture construct disabilities, which is by turning impairments into disabilities (Harpur, 2012). In this article, the author gives the example of a person with autism, whose behaviours may be categorised as a disability; however, it is not the individual that has created the disability but rather the way in which society constructs social diversity (Harpur, 2012: 327). One of the critiques of the social model is that it does not take into account the role of impairments on individuals. In the present study, the difficulties encountered by pupils on the spectrum are acknowledged and planning is differentiated to respond to their needs (use of visuals, clear language, adjustments to the environment). Parallel to these differences, which do not carry negative connotations, the pupils' strengths and abilities are also acknowledged and celebrated during the intervention programme, with the story itself promoting inclusive practice. The findings of the study support this idea since autistic pupils are mostly included during music and dance and work well and in physical proximity with their peers. In the second case study, presented in Chapter 7, Rosie's classmates acknowledge and celebrate her great abilities in music and movement and clearly appreciate her contribution to the group. Evidence from the monkey task (Chapter 5) confirms these hypotheses with the groups voting pupils on the autism spectrum as the most valuable or selecting the animal that the autistic child had during the sessions.

Harpur (2012) suggests using the term 'ableism' and focusing on the different abilities, thus replacing 'disableism' which by itself carries negative connotations. Terzi (2010) proposes the capability approach in inclusive education aiming to go beyond the tensions and dilemmas of differences and provide just and equal

educational provision for individuals with disabilities/difficulties. On the other hand, Kauffman (2011) argues that changing a label to make it less harsh does not change the real meaning of the words and that we cannot talk about something without naming it (labelling it). However, the word 'labelling' itself carries a negative connotation and could be seen as diminutive as compared to 'naming'. It also feels that 'labelling' describes a more permanent state. Individuals with autism, focus of the current study, are proud to call themselves autistic (Kenny et al, 2015) and the emphasis should be placed on raising awareness around autism in school and society. Although individuals on the spectrum may struggle in different areas of social and everyday life, and special adjustments should be made to meet the needs linked to their autism, their difference should be accepted and the special abilities and capacities should be celebrated if we want to refer to inclusive education. For this reason, terms with negative connotation should be replaced as well as the concepts and ideology behind it. The current study supports this framework by the use of respectful language, linked to the social model.

Hodkinson (2010) considers the language of disability and weakness degrading by referring to individuals who are not able; the use of such language constitutes a barrier for inclusion in education and society. Laughlin and Boyle (2007) reviewed the usefulness of labels and categories by comparing the pros and cons and suggest that the negative points outweigh the positive. Although labels are useful for the provision of resources, raising public awareness and supporting individuals and families they are also associated with a range of negative uses such as emphasis on deficits, stigmatisation, exclusion and bullying, reduced life opportunities and expectations. Raising awareness in education and society seems fundamental in the pursuit of inclusion as well as making changes in policy and practice that would on

one hand, facilitate the provision and respond to individual needs and on the other hand avoid exclusionary language and practice, which would be linked more to the medical model.

8.9.2 Location of schooling

Another debate in special education, unravelled in the literature review chapter, and key area in the study, is the location of schooling. In other words, what setting is the most appropriate schooling place for individuals with disability and mainly those on the autism spectrum? The study has been undertaken in mainstream primary schools in London where the pupils with autism were educated in the main classrooms. Despite the fact that a lot of individuals with autism achieve and have a successful school life in mainstream settings, specialist provision seems at the moment to be optimal equally for a large number of pupils who may not benefit from mainstream setting. The concept has been long time introduced by an SEN government action programme

'Identifying and disseminating good practice by special schools in developing practical links with mainstream schools, and promoting special schools' contribution to an increasingly inclusive system'. DfEE (1998: 22).

A solution to the debate of mainstream or specialist provision could be the suggestion of Warnock in 2005; of special needs settings being centres of excellence. There seems to be a growing number of teams by those specialist settings and the boroughs themselves who provide support and training for families, pupils and professionals working with children with autism educated in mainstream settings, thus raising awareness and enhancing practice and inclusion. There is a dearth in the literature on the role of outreach services in education

supporting children with disabilities and autism. McCrea and Stratford (1996) presented the role of outreach teachers from special schools focusing on school-based development, staff training, setting specialist school systems within a mainstream provision and offering support, resources and expertise. Such a system of support can offer unique sharing of experience and expertise and increases teachers awareness and confidence in working with children with autism. It is also a good way to model interventions and strategies used in specialised settings and working with the child, teachers and parents within a coaching, collaborative way.

A growing number of special needs classrooms within mainstream schools either run by the same schools or by a specialist setting with close collaboration seems to develop, which also appears to be a way of accepting difference and celebrating disability at the same time as responding to the varied needs of pupils who may benefit from small class group, adapted learning environment and teaching expertise. Therefore, it seems currently that the closure of all specialist schools may not be the way forward for inclusion. Having such institutions seems beneficial also giving the choice to a number of parents who may prefer special education.

Regarding pupils with autism the issue of location of schooling is more pertinent and heavily relies on individual differences, as difficulties and abilities range wider within the spectrum. A great number of individuals who may be on the high functioning end of the spectrum may be able to succeed in a mainstream school with some adjustments and some support whereas some pupils with more severe communication/ social difficulties and sensory needs may benefit from a specialised setting. According to Shakespeare (2006), a number of individuals with autism, as a result of their core difficulties may actually prefer self-isolation to

participation and it may be difficult to determine what social barriers should be removed to respond to the needs of individuals on the autism spectrum. Wider awareness of the public around autism could enhance understanding and therefore accepting of their individual differences and thus promote interaction and inclusion. The present study showed that group interventions involving music, dance and literacy could be undertaken with pupils with autism and their neurotypical peers and with positive outcomes for all, promoting inclusion.

8.9.3 Ways to promote inclusion

In order for inclusion to be effective in education and consequently in the social milieu, the following seem necessary:

- reconceptualisation of special educational needs and disabilities which will allow to raise awareness and understanding of difference without labelling. Focusing on the abilities and strengths of individuals could also enhance inclusion. In this, the arts and in this case music and dance can be areas where children with disabilities and autism specifically may excel, especially in relation to other areas of the curriculum. The above necessitate a deep reformation of policy and practice and involves the ethos of a whole school or establishment.
- in order to raise awareness, training for teachers around disabilities should be designed at a national level as part of their initial teacher training (Hodkinson 2009) and receive continuous support and training by specialist teachers and external professionals such as education psychologists, speech and language therapists, occupational therapists when necessary. Programmes of music and dance, designed by music/dance specialists or classroom teachers could be modelled for all staff.

- Special arrangements should be made for children with autism as is currently done with any other children who may have a physical impairment, hearing impairment or even English as a second language, even if the latter appears to be more obvious. This reiterates the importance of having a diagnosis in order to make necessary adjustments but at the same time changing the whole school ethos and raising awareness among peers to promote acceptance and inclusion. The present study highlighted some of the strategies that help pupils with autism engage and learn, among which is music and dance.
- Specialist provisions acting as centres of excellence and enhancing inclusive practice in mainstream schools by offering their support and expertise seem also to be necessary at this time, which also allows families to decide when, where and how they want their children to be educated and if at all included (Hodkinson, 2012).
- Finally, apart from reconceptualising disability, and special and inclusive education, in order for any educational policy to be effective, responding to the needs of all learners, we should transform education by moving away from the standards agenda. In the literature review chapter, the marketisation of education and the huge emphasis on impact and academic achievement was explored as one of the main barriers for inclusion. Runswick-Cole (2011) stresses that the standards agenda- focusing on academic attainment and achievement- conflicts with the inclusion agenda and schools are expected on one hand to raise their academic results and on the other to include pupils who may underachieve in the core subjects. In practice therefore, as the author states, pupils who require high levels of

> teaching support and resources and those who do not fit the 'behavioural and cultural norms' of the classrooms become 'unattractive' to schools that strive to improve their academic standards. Unless therefore we move away from *measuring* education mainly by academic results, achievement and impact, true inclusion seems an illusion.

8.10 Conclusion

This chapter discussed the main findings presented in chapters four, five, six and seven mainly in relation to the research question with an aim to provide some possible responses. It was actually found that music promotes engagement and dance physical proximity thus enhancing effective inclusion for children with ASC. The discussion drew on the literature to further support the findings and hypothesis of the study. Reference was made to how music and dance can be beneficial for children with autism with regard to their successful inclusion. These raise questions on how these findings contribute to knowledge, what are the implications for policy and practice and how they will inform future research, all of which are forming the concluding Chapter 9 of this thesis.

Chapter 9 Conclusion

9.1 Summary of the study

Inclusion has been a contested ideological framework affecting policy and practice in education for many decades now. As explored previously in the study, there is a debate around the conceptualisation of inclusion, location of schooling and the dilemma of identifying differences which may lead to difficulties in learning. However, despite these tensions, there is a general consensus among the advocates of inclusion that is best defined as a 'journey' or a 'process' (Culham & Nind, 2003). There is no means to an end when talking about inclusion, as the aim of achieving appropriate and equitable provision is always ongoing (Naylor, 2005). Parallel to these debates the main barrier seems to be the fact that policies of inclusion operate within a 'regime of accountability' (Allan, 2003; Frederickson & Cline, 2002; Allan, 2003; Clough and Garner, 2003; Hanko, 2003).

Particularly for individuals with autism, the issue of inclusive education is pressing as around 70% of pupils with a statement of autism attend mainstream settings (DCSF, 2008a) and they are at greater risk of bullying, isolation and exclusion than their neurotypical peers. This could be due to the difficulties that pupils with autism face in forming social relationships (Rowley et al. 2015). Friendship, positive relationships and feeling of belonging are placed at the core of inclusion as conceptualized for the purposes of this study. There is a wide range of social skills interventions for individuals with autism as well as approaches focusing on communication and friendships (Wang et al. 2013).

This thesis aimed to explore whether music and dance can promote the inclusion of children with autism attending mainstream school through participation in a small group intervention programme. Participation on task and physical proximity were used as proxy measures of inclusion. Mixed methods were used for the collection and analysis of the data with video being main tool in the analysis.

The findings suggest that music is a strong motivational factor for participants with autism and promotes engagement on task and inclusion. Music and dance have been found to enhance physical contact and cooperation in the group, thus promoting acceptance and inclusion. The intervention programme as a whole had positive impact for all participants with regard to their social interaction and belonging in the group. Music and dance have had a positive impact on the pupils; children with autism engaged in the music and dance based activities and interacted with their peers in a small group at the same time developing their social, language, and motor skills. In addition, participation in music and dance have been found to improve joint attention and helped children self-regulate their emotions and be calm and ready to learn.

9.2 Implications for practice

The current study offers suggestive evidence for the use of music and dance in schools to support the inclusion of children with autism.

Music and dance can be used to complement storytelling and literacy.

It was found in the study that during music or dance tasks, pupils were more engaged on task and included in the group, as compared to language-based activities. Pupils were also found to be more engaged after a music and/or dance task and more likely to stay focused on the story. Music was also found to be the

most predominant cue for pupils to remember a task from the previous sessions, again compared to story.

Music can be effective during literacy:

- by promoting understanding of verbal language
- by engaging and motivating pupils to take part in activities linked to a story
- by improving memory through repetition.

Activities involving music and dance can be designed based on the content of a book/story and incorporated within the lesson planning. These could include for example: having music on the background, sing a song based on the story, dance a scene from the plot, use props relevant to story and musical instruments and movements, simple games related to theme.

Music and dance can also be used in the class:

- to teach social skills
- as movement break for children with autism who may find it difficult to sit for long periods of time.
- to boost confidence in children who are good at dancing and enjoy communicating this way
- as a way to decrease anxiety, help children relax and modulate their senses.

Music and dance can be part of the everyday curriculum and day timetable for the benefit of all pupils. Relaxing music can be used for instance at the beginning, middle and end of day to help pupils relax and get in a good state for learning. Also during transitions between activities of the day e.g. coming in from break/lunchtime, getting dressed for PE, going home at the end of day, moving from carpet to group work table, music can be used to facilitate this process either

through the use of specific songs or rhythms. Movement breaks in the form of simple dance activities/games in a circle and accompanied by music are a good opportunity for all students to move, regulate their vestibular systems and concentrate on the following tasks. It was evident for the case studies in the present study that pupils were more likely to be more engaged and stay sitting down for longer after being involved in a dance task. Music and dance were also found to be areas in which pupils with autism perform better in comparison to story based tasks, which involve language processing and comprehension. Therefore, their peers accepted the pupils with autism and celebrated their strengths in music/dance. Music and dance could be incorporated more frequently during the timetable to heighten confidence and self-esteem.

9.3 Limitations of the study

Despite the study achieving its aims, there are some unavoidable limitations. The most obvious limitation of the study is the small sample of participants. Due to time constraints, seven pupils on the autism spectrum participated in the study of seven groups of six children in total. The small number of participants in conjunction with the heterogeneity of the children across the spectrum posed challenges in the quantitative analysis. Non-parametric tests were used due to the large deviations from normality. Although sample effect sizes were large, in order to generalise the findings for a larger population, a larger number of participants should have been involved. The replication of the study with different groups of participants would enable better generalisability of the findings of the study.

Another limitation of the study is the observational design of the analysis. Thus, true conclusions about the directions of causality implied by the findings cannot be drawn. Furthermore, the relationships among variables must be interpreted with caution. Firm causal inferences can be drawn when testing interventions using longitudinal data. This is especially important for a subject like children's behaviour that is not static but is a developmental process that changes over participants and time. Similarly, the coding system selected to evaluate children's engagement and inclusion in the group may present some limitations. Although there was high interrater reliability agreement, and video was the most appropriate tool for the analysis, determining task engagement can be challenging. As far as the observational checklists completed by the teachers are concerned, which state positive benefits at the end of the programme for all pupils with autism; it is not possible to determine whether these results are solely due to the intervention.

Although the views of teachers were taken into consideration through the analysis of the checklists and feedback given in the two case studies, it would be beneficial to capture the opinions of pupils as well. The analysis of the monkey task and the detailed case studies presented an example of the participants' views; however further analysis of the peers' feelings and feedback from the pupils with autism could add substantial information on the impact of the music and dance intervention programme.

The missing data, due to technical issues of the cameras and pupils absence may have had an impact on the effectiveness of the intervention and therefore the findings of the study.

The fact that only one practitioner (myself) delivered the intervention, might have influenced the effectiveness of the programme. Having more than one adult leading the programme and preferably of different professional background could provide firm results of the effectiveness of music and movement for pupils with autism.

Although the content of the story used in the intervention was original and unknown to the pupils in advance, original music might have also had different effects on the engagement of pupils. The present study did not acknowledge in the analysis of the data the fact that, in some sessions, the participants were familiar with the songs/music used. Similarly, regarding the design of the programme, despite the use of visual aids and props, it would be beneficial to add further visual prompts and more sensory elements to increase motivation to the story. However, the programme was designed by the idea that it can be replicated by any teacher, support staff or arts specialist without specific knowledge.

9.4 Directions for future research

Future research into the effectiveness of music and dance for children with autism might usefully focus in particular on implementing a programme in different settings and with different age groups. This could involve several professionals both in mainstream and specialised settings to measure the effectiveness within different groups of participants. Linking the fields of music and dance therapy and education in research could also be further explored by delivering the interventions in a range of settings. Large randomised controlled trials could provide more definitive evidence.

Overall, outcomes of different types of support need to be precisely measured in order to build a common overarching framework for supporting pupils with ASC in mainstream school. This will enable to find different ways of assessing task engagement and inclusion and provide a solid measurement tool, which will be used in a range of intervention programmes.

Further research should be carried out to explore why and how in particular music and dance can impact on the engagement of pupils with autism and their willingness to participate in a group and be in physical proximity/contact with others. The link between music/dance and sensory system remains an area to be elucidated by future studies in the field.

Appendix 1

Ethical Approval.

The research for this project was submitted for ethics consideration under the reference ‘Inclusion of children with autistic spectrum disorder through music and dance’ at the Department of Education and was approved under the procedures of the University of Roehampton’s Ethics Committee in December 2009.

Appendix 2

ETHICS APPLICATION FORM

Please read the Notes for Applicants before completing this form

The form should be completed electronically using black size 12 font.

PLEASE TICK THE RELEVANT BOX			
MEMBER OF STAFF	☐	RESEARCH STUDENT (MPhil, PhD, EdD, PsychD)	X
EXTERNAL INVESTIGATOR	☐	STUDENT (Other)*	☐

*Please note that if you are on a taught course you do not need to complete this form unless your project is worth more than 50% of your total credits or you have been asked to do so by your tutor or School Ethics Committee

SECTION 1: PERSONAL DETAILS

Please complete the header with your name and School

Name (lead):	Athina (Tina) Stamou
Other investigators:	
Correspondence address	88 Palmerston Crescent N13 4NH
Telephone no:	07551307852
Email:*(all correspondence will be sent by email unless otherwise requested)*	tinastamou@gmail.com

FOR STUDENTS ONLY:	
Programme of study:	MPhil/PhD
Mode of study (full-time/part-time)	Full time
Director of Studies: (If you are on a taught course please give the name of your supervisor)	Dr Nigel Marshall Prof. Adam Ockelford, Dr Lorella Terzi
FOR EXTERNAL INVESTIGATORS ONLY (please see Section 4.5 of the Ethical Guidelines):	
Name of Academic Assessor:	

SECTION 2: PROJECT DETAILS

Title of project:	Inclusion of children with autistic spectrum disorder through music and dance
Proposed start date: *(Please note it can take several months to get approval. The Board will not approve a retrospective start date)*	7 September 2009
Duration:	12 months
Source of funds:	Self- funded

Purpose of the proposed investigation :

The aim of the proposed research is to explore the impact of music and dance on the social inclusion of primary-aged children with ASD. In particular it seeks to discover how pupils across the spectrum can benefit from music and dance/movement sessions in terms of their interaction with their peers and their socialisation, thus enhancing their effective inclusion

Outline of project:

Include details of methodology and identify ethical issues.

The proposed study will seek to discover the social outcomes of a music/dance intervention for children with ASD. It will use a mixed methods approach, combining qualitative and quantitative tools for the gathering and analysis of data. In order to explore how music and dance can promote the socialisation of students with ASD an intervention will be designed and pre-tests and post tests will be used to measure the outcomes. The study will consist of two parts: a pilot phase, to test the design of the study and trial, and -if necessary refine-, the data gathering and analytical approaches to be used; and the main study.

The researcher will use the following two approaches in assessing the nature of the social interaction in which the children engage: sociometric measurement (Spychiger, 2001) and social games (Kirschner and Tomasello, submitted). These will be complemented with semi-structured teacher interviews 1 month and 6 months post intervention.

The second stage, the main empirical phase of the study, will consist of sessions undertaken with 5 to 7-year-old pupils attending Reception, Year 1and Year 2 in different mainstream primary schools in London. The participating groups will each consist of a mixture of six boys and girls and include one child on the autism spectrum, as identified by the school's educational psychologist. His or her assessment will be used to support the subsequent analysis of social development.

The intervention sessions will last approximately thirty minutes and will run in a six week programme. Pre-tests and post-tests will be held before and after the intervention period. The intervention will consist of a story, suitable for 5 to 7-year-old pupils, including those with ASD (that is, avoiding abstract concepts, and rooted in the children's everyday experiences), which will be narrated to and by the pupils.

During the intervention, four different variables will be incorporated namely; i) music, ii) dance, 3) music and dance, and 4) neither music or dance (story by itself). This will allow comparison of the different variables and their effect on social interaction on pupils with different levels of ASD. The project will involve a total of 12 groups, which will allow data to be gathered from three trials pertaining to each experimental condition. Interviews will be generated with teachers and students one month and six months after the completion of the programme in order to evaluate a longer lasting outcome of the music/dance sessions on the social inclusion of the participants. The sessions will be recorded on video.

Ethical issues:

It is acknowledged that certain ethical issues are involved especially when the research involves young children and specifically pupils with autism spectrum disorder who might have difficulties in language and communication. More specifically, participants might have difficulties in understanding the aims and process of research and also in communicating clearly their feelings and needs.

Therefore, the researcher will ask the teachers and parents to explain to the participants the project and also information given to children will be in written form and in age appropriate language and format. With the aid of the educational psychologist of the school, the teacher or the SENCO and according to the individual needs of each students additional strategies can be used (PECS-Picture Exchange Communication System, www.pecs.com, Makaton,www.makaton.org). The researcher will ensure that the children have understood that they can refuse to participate at any stage of the process. Individual professionals who work with the children will be asked to note and inform you if the children are thought to have a negative reaction to engagement in the activities.

In addition, parents will be asked to give full consent for the participation of their children in the research. They will be provided with written information regarding the aims of the study and the data collection process. They will also be informed of their right to withdraw the child at any time. As mentioned above, the sessions will be video recorded. As a result, childrens' faces might be clearly visible and therefore identifiable. All participants and gatekeepers have the right to withhold permission. The researcher will ensure that no child is identifiable unless permission has been given.

School staff will also be informed in written form about the study and teachers who will participate in the interviews will be asked to give full consent. They will be reminded of their right to withdraw from the project at any stage and will be assured that the information they provide will be anonymous and confidential.

All results will be reported honestly and precisely. Publication of results will comply with the Data Protection Act, 1998. All participants' information will be carefully protected. No names will be attached to either the video-recordings or the interviews. Names of the participants will be changed to protect individual's identity and ensure anonymisation.

Outline of project (continued):

Please continue on extra sheets if necessary.

It is acknowledged that ethical issues might arise when offering different interventions to different groups of children. For this reason, the researcher will design all interventions in a way that will be pleasant, enjoyable and in some aspects beneficial for all participating groups. In addition, the style of music used will be within the children's musical vernacular, and will not cause distress.

If a child becomes distressed at any stage, the researcher will stop the session and seek to reassure the child. If distress is not reduced the researcher will ask the Learning Support Assistant to withdraw the child either from the activity, the session or from the whole procedure.

Children with ASD who are allocated with a learning support assistant will have the opportunity to attend the session with their helper if they wish to do so. In any other case, I will make sure that another adult will be present to assist me in ensuring the safety and well-being of all students. I have undergone CRB check and disclosure document can be shown upon demand

SECTION 3: USE OF PARTICIPANTS

- You should download the Participant Consent Form Template and amend it if necessary
- You should also attach any other information to be given to participants
- You should consider carefully what information you provide to participants, e.g. scope of study, number of participants, duration of study, risks/benefits of the project
- If images or anything else which might allow the identification of participants is to be publicly accessible (e.g. on the web), further written consent must be secured

Give details of the method of recruitment, and potential benefits to participants if any:

Participants will be pseudo randomly selected from primary schools in the area of Greater London. No payment will be made to any school or individual. The children who will participate in the research will benefit from a creative and joyful activity and will have the chance to express themselves and play with their peers. The children's teachers will benefit by having their knowledge enriched on the potential power of music and dance activities for the inclusion of students with ASD and will have the chance to reflect on their own practice.

Will you be using participants who are aged under 18?

YES

If you have answered Yes please highlight the particular issues raised by working with these participants and how these issues have been addressed.

It is acknowledged that certain ethical issues are involved especially when the research involves young children and specifically pupils with special needs who might have difficulties in language and communication. In this case, language at an appropriate level will be used, using advice obtained from the school (see above- use of augmentative communication techniques). Moreover, the researcher will monitor the ethical procedure throughout the data collection and ensure that any ethical issue arising during the research process is addressed in accordance with research guidelines. Finally, all school child protection policies and arrangements have been obtained and will be followed.

SECTION 4: HEALTH AND SAFETY

- **You must download and complete the Risk Assessment Form and attach this to your application.**
- You should be able to demonstrate that appropriate mechanisms are in place for the research to be carried out safely
- If necessary the University's Health, Safety & Environment Manager should be consulted before the application is submitted

Appropriate care will be taken in the use of video camera and equipment. All cables will be rooted and taped in order to avoid trip hazards and all equipment will be secured at all times. The video recording equipment will be safely treated by the researcher or an assistant during recording. Only equipment which has been subject to university PAT procedures will be used. Arrangements will be made so that the room selected for the sessions will be accessible to all participants and furnished with care so that the risk of bumps and falls is minimised.

Will any of your project take place outside the UK?

NO

If you have answered yes please list the countries below and refer to Section 4.2 of the Ethical Guidelines:
Is this a clinical trial or a project which may involve abnormal risk to participants? NO If you have answered Yes please refer to Sections 3.5 and 4.2 of the Ethical Guidelines

SECTION 5: PUBLICATION OF RESULTS

How will you disseminate your findings? (e.g. publication)

The findings of this research will be published in the form of the academic thesis, in academic journals and conference papers. Description of participants will not identify individuals or schools. All names will be changed in order to protect personal information. No images which permit the identification of any participant or school will be included in any publication or presentation of the research without prior permission. No information will be used in a judgemental way.

How will you ensure the anonymity of your participants?

(If your participants do not wish to remain anonymous you must obtain their written consent.)

Pseudonyms will be used

SECTION 6: STORAGE OF DATA

Section 2.7 of *Roehampton University Code of Good Research Practice* states the following 'research data must normally be retained intact for a period of at least six years from the date of any publication which is based upon it. Researchers should be aware that specific professional bodies and research councils may require a longer period of data retention.'

Describe how and where the following data will be stored and how they will be kept secure:

Raw and processed data

All data will be kept in a personal computer at the researcher's home password protected and accessible only to the researcher. Video tapes and field notes will be also kept in a locked drawer in the researcher's office and researcher will be the only holder of key. Special care will be taken when transporting data between the schools, the university and the researcher's home

Documents containing personal details of any participants

All data will be saved in two different databases. Documents containing personal information and contact details of participants will be stored at a separate database accessible only by the researcher. A reference number will be used in the accessible database.

SECTION 7: EXTERNAL GUIDELINES AND APPROVAL

Are there any relevant subject-specific ethical guidelines (e.g. from a professional society)?

This research will comply with the BERA Ethical Guidelines for good professional conduct and statement of ethical practice.

If so how will these inform your research process?

Specific reference is made to undertaking research with vulnerable individuals whose age, intellectual capability or other vulnerable circumstance may limit the extent to which they can be expected to understand or agree voluntarily to participate. As mentioned above and underlined in BERA guidelines the research will seek approval of parents and also use alternative ways of enabling communication with the participants. Finally, the issue of

offering different interventions will be dealt appropriately (see above-section 2)
Has/will the project be submitted for approval to the ethical committee of any other organisation, e.g. NHS ethics approval? (Please see Section 4.3, Ethical Guidelines) What is the outcome of this?

SECTION 8: APPLICANT'S SIGNATURE	
Applicant's signature:	Tina Stamou
Date:	7/7/09

Appendix 3

Roehampton University London ETHICS BOARD

PARTICIPANT CONSENT FORM PRO FORMA

Title of Research Project: Inclusion of children with autism spectrum disorder through music and dance

Dear Parents,

My name is Tina Stamou, I am a research student in Roehampton University and I am investigating whether and how music and dance can be beneficial for students, including those with autism, in mainstream schools. It will be a six-week programme of 30 minute creative sessions, during which your children will listen to stories, play, create and socialise.

I will also ask your children if they wish to participate and will inform them of their right to withdraw at any stage of the research. Sessions will be video recorded and therefore I would like your permission for recording and storing images of your children as well as audio-visual material. Images will be used for educational purposes, PhD thesis and journals as well as presented in seminars and conferences. In order to ensure anonymity and protect the identity of the students I will ensure that no child is identifiable; also pseudonyms will be used.

Thank you

Tina Stamou

Investigator Contact Details:

tel.07551307852 email: stamoua@roehampton.ac.uk

Consent Statement:

I agree for my child to take part in this research, and am aware that I am free to withdraw my child at any point. I understand that the information I provide will be treated in confidence by the investigator and that my child's identity will be protected in the publication of any findings.

Name ……

Signature ……

Date ……

Please note: if you have a concern about any aspect of your participation or any other queries please raise this with the investigator. However, if you would like to contact an independent party please contact the Dean of School (or if the researcher is a student you can also contact the Director of Studies.)

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Appendix 4

Roehampton University London

ETHICS BOARD

PARTICIPANT CONSENT FORM PRO FORMA

Title of Research Project: Inclusion of children with autism spectrum disorder through music and dance

To Teachers

My name is Tina Stamou and I am a research student in Roehampton University. I am investigating the potential capacity of music and dance to promote the social inclusion of young children with autism spectrum disorders. An intervention will be designed for a six-week programme and each session will last 30 minutes during which children will have the opportunity to listen to and narrate stories, express themselves creatively and socialise.

If you are interested in this project and would like to participate, you will be interviewed one month and six months after the completion of the programme. You have the right to withdraw at any stage and pseudonyms will be used to ensure the anonymity of all participants. Data will be used for educational purposes, PhD thesis and journals, as well as presented in seminars and conferences. Data will be securely stored.

Thank you

Tina Stamou

Investigator Contact Details: Tina Stamou

Tel 07551307852, e-mail: stamoua@roehampton.ac.uk

Consent Statement:

I agree to take part in this research, and am aware that I am free to withdraw at any point. I understand that the information I provide will be treated in confidence by the investigator and that my identity will be protected in the publication of any findings.

Name ……

Signature ……

Date ……

Please note: if you have a concern about any aspect of your participation or any other queries please raise this with the investigator. However, if you would like to contact an independent party please contact the Dean of School (or if the researcher is a student you can also contact the Director of Studies.)

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Appendix 5

Observation profile

Part 1 Give a brief word picture of the child in the Early Years setting, noting positive points as well as concerns

Part 2 Observed behaviours

Rate using the following key: **N**= Not present **I**= Indifferent

D= Developing **F**= Fluent

Social Interaction

Spontaneous use of gaze	**N**	**I**	**D**	**F**
Looks at adult who is talking to him				
Follows adult gaze when adult is looking at an object				
Looks at adult's face when playing with him				
Looks at adult to prompt the repeat of an action game or song				

Spontaneous maintenance of proximity	**N**	**I**	**D**	**F**
Allows adult to physically interact in games				
Allows adult to intervene/share in play				
Tolerates other children sitting nearby				
Allows other children to physically interact in games				
Watches other children playing				
Tolerates other children playing alongside				

Tolerates other children intervening in his play				
Responds to friendly handling				

Imitation	**N**	**I**	**D**	**F**
Responds to imitation of his actions with further repetition				
Initiates and pauses to allow imitation in social play				
Imitates gestures on cue and actions with object e.g. waving, clapping, hitting drum with stick				
Imitates simple facial expressions e.g. smile, grimace				

Turn-taking	**N**	**I**	**D**	**F**
Takes turns, physically prompted in simple ball game e.g. rolling ball to and from adult				
Takes turns in simple ball games with adult/child				
Takes turns in table-top activity with another child				
Takes turns in table top activity with more than one other child				
Takes turns in gross motor games				

Initiating	**N**	**I**	**D**	**F**
Shows/offers object/activity to an adult				
Shows/offers object/activity to a child				
Waves bye-bye spontaneously				
Greets familiar adults				
Will spontaneously approach adult when in need of help				

Will initiate a simple game with adult				
Will initiate a simple game with a child				
Will give out snacks at break-time				

Emotional expression and understanding	**N**	**I**	**D**	**F**
Recognises a smile and can imitate adult's exaggerated demonstration of a smile				
Recognises a sad face and can imitate this				
Recognises an angry face and can imitate this				
Can discriminate these expressions on an adult face and can produce these expressions on demand				
Can recognise and match expressions in drawings				
Can respond to a smile with a smile				
Uses sad expression if upset				

Social behaviour and play	**N**	**I**	**D**	**F**
Explores properties and possibilities of toys and other objects with interest				
Plays skillfully				
Plays with other children but will not share toys				
Shares toys				
Shows concern for siblings and playmates				
Actively helps siblings and playmates				
Chooses best friends				

Appendix 6

Story The adventures of Leo and his friends

1. Once upon a time there was a king whose name was Leo the Lion. One day as he was walking in the jungle he saw something shining in the bush. He gets nearer and starts searching inside the bush. As he is looking into the bush guess what he sees: a golden treasure box. He looks carefully and finds a message. Leo unfolds the paper carefully and this is what it said: 'Whoever finds this box must follow the map in order to find the key that will open the box'. Full of joy, he pockets the message and the map and he goes looking for his friends for their help. So he climbs up on the nearest rock, he looks around and sees his friends. There they were; the bear, the giraffe, the penguin, the mouse and the monkey. He runs over to them and tells them all about the box that he found. As they heard the news they jumped of joy, they all agreed to help. As it was already getting dark they decided to get some sleep first. In the morning they got on to a boat and they sailed to the very island that was drawn on the map and the island was Coral.

2. As they get near the island they couldn't believe their eyes. The closer they get the trees, the birds and even the flowers were huge. As soon as they get on the shore Milo unfolds the map to find the way. They follow a wide path which leads them to a huge lake. And now? How will they get across? The penguin without giving it a second thought dives in the water and swims across. "We have to build a bridge "says the Monkey. Firstly, they all laughed at him as he was always sitting on his own and they rarely listened to what he had to say and rarely played with him. As there was nothing else they could do they started looking for tree trunks but it was all in vain. Anything they could find was useless for what they wanted it for. Then the Giraffe had a great idea. Let's find some large stones, throw them in the water and step on them to cross the lake. The Elephant who was the strongest started first and the others helped as well. Soon they were over to the other side and they opened the map to find their way. But, disaster, the map got wet. The path that they had to follow was wiped off. In front of them now they could see a crossroad they look to the left nothing; they look to the right nothing. They couldn't find a clue anywhere. Which way to go? nobody knew …

3. The wise old bear gave them the solution. She put on her magic glasses and started showing them the way. They walked and walked for hours under the boiling sun and the burning heat without even knowing if they were following the map. In the end, they arrived at the big golden gate and the bear read: 'this is the Tiger's palace'. As there are no doorbells in this story, what else could they do? They started banging on the heavy door hoping that somebody

might hear them. All in vain. They tried pushing but it was too heavy. Even the strong elephant that could move heavy rocks couldn't do a thing. As they were getting nowhere and almost in tears suddenly there was a big roar. They turn around and there it was: a huge tiger appeared in front of them. They shook with fear. But the tiger instead of making a meal of them, asked them: 'how did you get here?' 'We want to cross this gate madam in order to get to the flower house!' 'Could you help us please?' asked Milo. 'I will only let you through this door on one condition: You must do for me the circle dance… and so they did and the Tiger opened the gate. 'And now which way to go?' asked the Penguin. You must follow the path of truth and friendship said the Tiger and disappeared. 'The path of truth and friendship?' they wondered. As they were thinking about the tiger's riddle they started walking towards a place they knew nothing about.

4. They were walking and walking as it was getting dark. The stars covered the sky but there was not enough light and the animals could barely see where they were going. Soon they could hear the sounds of the trees and leaves as they were already walking in the forest. It must be the haunted forest said the mouse shivering with fear. The Lion who was their King and leader said that they should stick together and not let the ghosts scare them. But how will we move on? We cannot see a thing everything is black said the giraffe. Let's wait for the sun to come out said the bear who was already so sleepy. No, no, no said the monkey it is very scary and the night is long. Why don't we ask from the Moon to help us? Said the penguin, he will come out if we all say loud enough. So they all stood next to each other and said: 'our beloved moon, king of the sky, come out soon and be our ally' And the moon as if he heard the animals' prayer came out of a huge cloud and appeared shining in the sky showing them the way out of the forest.

5. As the sun rose so did our friends and the hunger in their tummies was awake also. Now what are we going to do? I am so hungry they all said. Hungry as they were they followed a path and in the end found themselves in a field full of goodies. Huge trees with juicy fruits and then baskets with all sorts of food. They were so happy they didn't know what to do. First of all, the Lion grabbed a burger and the Penguin found some fish and chips which he shared with his friend the Bear. The Mouse was drooling over a large piece of cheddar that he found whereas the Giraffe went straight to a tree full of fruit and vegetables that loved so much. And as they were all eating happily nobody realised that the Monkey had disappeared. They were so full up, they lied on the thick grass and realised that the Monkey was missing. They jumped up and started looking for the little friend. They looked here and there and guess where they found him. He was lying next to a weird looking tree full of big juicy bananas. The Monkey had eaten few of them and was lying still without moving at all. Is he alright? Asked the Bear. The Lion got closer and put his ear next to his mouth. He is alive he said but has fallen into a deep sleep. These bananas must be poisonous, said the King. What shall we do now? wondered the Penguin. Let's throw some water on his face! And

went to get some. But nothing could wake him up whatever they did. They started feeling bad because they were not friendly with him, they used to laugh at him and the Monkey was almost always sitting and playing on his own. Now they realised that during this adventure he had been very helpful but they did not realize it then. He was a true friend to all in the group and enjoyed their company. The rest of the group burst into tears because they regret for the way they behaved. Their heart was beating hard and their tears were like rivers. The one that cried most was the Lion and the true tears of regret were touching the Monkeys face. And suddenly, opened his eyes. So the love and true friendship woke the little monkey from the deep sleep.

6. The animals all together safe and happy continued their journey. After crossing beautiful fields, rivers and forests they finally arrived at the fairy's flower house where the key was hidden. 'According to the map, the key is hidden in the ballerina music box' said the penguin with pride. The animals start looking around the house for the box. Whoever finds it, opens it and reads the riddle: 'In order to open the treasure chest, you need to solve the following riddle. Which word starting with an ''f'' helped you pass all the adventures? (The answer is 'friend', 'friendship').

Appendix 7

Outline of music and dance intervention programme

1st session:

- Story: Lion finds the chest, map and the note and invites his animal friends to join in the adventure
- **Choose animals** (**monkey task** lonely, plays alone, has no friends)
- Animal masks- colouring activity
- **Animal dance** (assess movement/ coordination)
  - First part music only- animals asleep- wake up ready for journey
  - Movement- Improvisation- animal moves/Music- classic- relaxation

2nd session:

- Repeat task from previous week
- Story: Arrival at the island where everything is huge-1st challenge: cross the lake
- **Task with stones** (exercise requires cooperation/body contact)
  -With and without music: natural water sounds

3rd session:

- Repeat task from previous week
- Story: Arrival at the palace- gate is closed- Tiger requests a dance in order to open it
- **Circle dance** 3 parts
  -structured dance routine in circle holding hands (8 steps/4 patterns)
  -freestyle solo dance
  - pairs (same as circle dance routine)
  Music: African drums (fast)

4th session:

- Repeat task from previous week
- Story: Forest at night- Moon- Cross the forest/dark cave
- **Tunnel+ musical instrument rainmaker (**coordination-turn taking)

5th session:

- **Repeat** task from previous week
- Story: Field of foods- poisonous bananas-monkey goes into deep sleep- tears of friends wake the monkey up
- **Song**- learn and sing (Toy story- You've got a friend in me)

- **Movement/partner game to music** (walk+ hug peer when phrase 'you've got a friend in me' /concentration and body contact)

6th session:

- **Repeat** task from previous week
- Story: arrive at Fairy's house, look for the music box, solve the riddle
- **Music and dance** (free): 'We did it' Dora the Explorer
- **Monkey task**
- Treasure chest gifts and games to finish
- Plenary of intervention programme

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